

# PCM-F1

*US Model  
Canadian Model  
AEP Model  
UK Model*




## DIGITAL AUDIO PROCESSOR


### SPECIFICATIONS

Signal system	Conforms to EIA television standard, NTSC color (NTSC system) or Conforms to CCIR television standard, PAL/SECAM color (PAL/SECAM system)
Code format	Conforms to the technical specifications of the EIAJ (standard format using 14-bit quantization), or 16-bit quantization format
Number of audio channels	2 channels
Sampling frequency	44,056 Hz (NTSC system) or 44,100 Hz (PAL/SECAM system)
Quantization	14-bit linear quantizing, or 16-bit linear quantizing
Frequency response	10-20,000 Hz $\pm 0.5$ dB
Harmonic distortion	Less than 0.007% (14-bit format) Less than 0.005% (16-bit format)
Dynamic range	More than 86 dB (14-bit format) More than 90 dB (16-bit format)
Channel separation	More than 80 dB
Wow and flutter	Below measurable limit
Error correction	Error correction and concealment using CRCC and parity
Emphasis	Pre-emphasis (in recording): fixed at ON De-emphasis (in playback): automatically switched to ON or OFF (by detecting pre-emphasis identification code) Time-constant: 50 $\mu$ sec, 15 $\mu$ sec

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHEMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

— Continued on page 2 —



# SONY®

## SERVICE MANUAL

# PCM-F1

## Inputs

	Type	Reference input level	Impedance	Minimum input level
MIC	Phone	—	Accepts low impedance microphones.	0.435 mV (−65 dB)
LINE IN	Phono	−10 dB*	40 kilohms	95 mV (−18 dB)
VIDEO IN	Phono	1 Vp-p	75 ohms	—

## Outputs

	Type	Reference output level	Load impedance
LINE OUT	Phono	−10 dB**	More than 10 kilohms
VIDEO OUT	Phono	1 Vp-p	75 ohms
COPY OUT	Phono	1 Vp-p	75 ohms
HEADPHONES	Stereo phone	−24 to −48 dB Attenuation: 5 steps (24, 18, 12, 6 and 0 dB)	Accepts low impedance headphones.

\* Input level when the peak program meters deflect to −15 dB.

\*\* Output level when the playback level is −15 dB as shown by the peak program meters.

## General

**Power requirements** Operating voltage: 12 V dc  
 Usable power sources:  
 12 V dc with the Sony NP-1 rechargeable battery pack (optional)  
**US, Canadian model:**  
 120 V ac, 60 Hz with the supplied AC-700 ac power adaptor  
**AEP model:**  
 220 V ac (or 240 V ac adjustable by authorized Sony personnel), 50 Hz with the supplied AC-700 ac power adaptor  
**UK model:**  
 240 V ac (or 220 V ac adjustable by authorized Sony personnel), 50 Hz with the supplied AC-700 ac power adaptor  
**US, Canadian model:**  
 12 V car battery with the Sony DCC-2400B car battery cord (optional)  
**AEP, UK model:**  
 12 V car battery with the Sony DCC-2500 car battery cord (optional)

**Power consumption** 17 watts dc

**Dimensions**

PCM-F1: Approx. 215 × 80 × 305 mm (w/h/d)  
 (8½ × 3¼ × 12⅞ inches)

AC-700: Approx. 107 × 80 × 305 mm (w/h/d)  
 (4¼ × 3¼ × 12⅞ inches)

not including projecting parts and controls

**Weight**

PCM-F1: Approx. 4 kg (8 lbs 13 oz) net

AC-700: Approx. 3.2 kg (7 lbs 1 oz) net

**Total weight**

Approx. 8.1 kg (17 lbs 14 oz) in shipping carton, including PCM-F1 and AC-700

## FEATURES

In conventional analog recording systems, the quality of sound reproduction depends upon the properties of magnetic tape and heads, so that it is virtually impossible to bypass the inherent limitations of conventional analog recording, including its limited dynamic range and frequency response, and its associated distortion.

The Pulse Code Modulation (PCM) system points the way to a new era in sound reproduction. It can offer performance and fidelity far superior to any analog system.

In the PCM system, sound levels are converted to a series of binary codes. This information is recorded as digital pulses of equal amplitude. In playback, all that has to be done is to discriminate between the presence and absence of a pulse. The quality of recording and playback is thus not dependent on the characteristics of tape and heads.

The PCM-F1 is the newest addition to Sony's line of PCM digital audio processors for consumer applications. With the PCM-F1, hi-fi sound reproduction with wide dynamic range, minimal distortion, low wow and flutter (lower than the measurable limit), and flat frequency response is achieved. Listening to the reproduction of your PCM-F1 is just like being in the concert hall.

### Compact, lightweight PCM digital audio processor

In conventional digital audio processors, several hundreds of ICs are employed in digital processing circuitry, which makes it difficult to make the unit compact and lightweight.

The three new LSIs for digital processing developed especially for digital audio processor use have successfully made the PCM-F1 compact and lightweight. The A/D (analog-to-digital) and D/A (digital-to-analog) converters, which are newly developed monolithic ICs, are especially adaptable to mass production. This results in the production of a PCM digital audio processor that is more affordable to a greater proportion of audio-philes.

### Resolution selector for recording and playback with wider dynamic range and less distortion

The PCM-F1 was developed in accordance with the technical specifications of the Electronic Industries Association of Japan (EIAJ), which has adopted the 14-bit linear quantization format. In addition, the unit has the capability of recording and playing back in accordance with the 16-bit linear quantization format with wider dynamic range and less distortion than the 14-bit format. The 14-bit and 16-bit formats can be selected with the RES (resolution) selector.

### Three different power sources

The unit can be operated on three different power sources: house current using the supplied ac power adaptor, optional rechargeable battery pack, and 12 V car battery using an optional car battery cord. When this compact, lightweight PCM-F1 is combined with the Sony SL-2000 or Sony SL-F1 series portable video cassette recorder, you can make a live field recording with wide dynamic range, minimal distortion, and flat frequency response.

### Stable power supply

Two dc-to-dc converters incorporated in the unit—one ( $\pm 5$  V) for the digital circuitry and the other ( $\pm 15$  V) for the analog circuitry—assure stable power supply.

### Easy tracking adjustment of video heads

Correct tracking adjustment of the video heads can be easily performed by observing a meter.

### Muting switch for continuous sound reproduction

With the MUTING switch set to OFF, the reproduced sound is not cut off even if many dropouts occur, or if the tape is not being transported at the proper playback speed.

**Record muting function** allows you to easily insert a blank space between selections.

**Multi-generation digital-to-digital tape copy** can be performed with absolutely no deterioration in signal quality.

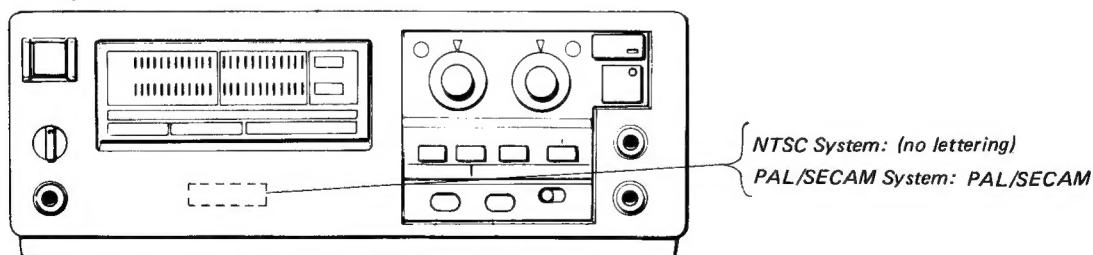
**With the highly perfected error detection and correction circuits incorporated**, the reproduced sound quality is not affected by dropout errors.

**You can choose either of two ways to have the peak level indicated on the LED peak program meters.**

**Microphone head amplifiers** are incorporated for recording directly from microphones and provide excellent sound quality.

## SIGNAL SYSTEM IDENTIFICATION

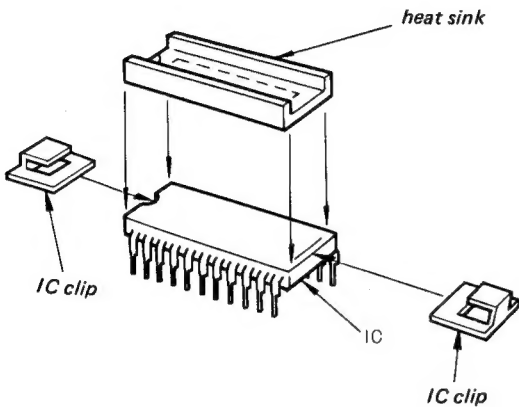
Front panel



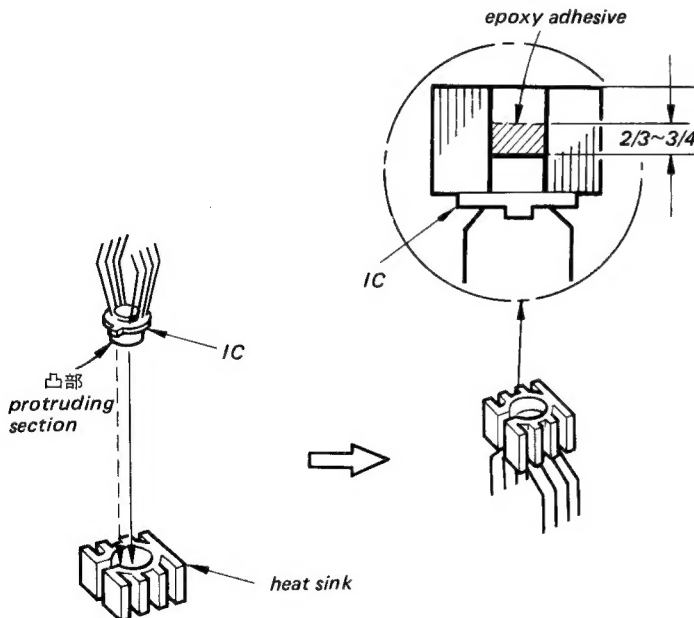
## SERVICING NOTE

### Notes on IC, Transistor Replacement

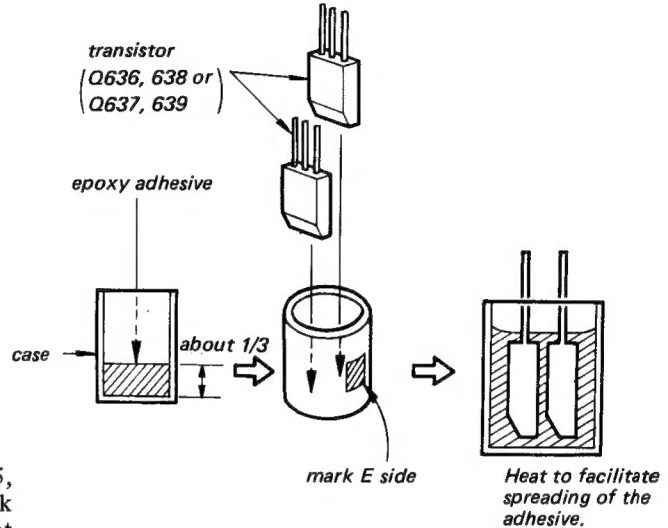
●When replacing IC104, 204, 304, 505, first clean the top of the IC and the bottom of the heat sink with alcohol, then apply an epoxy type adhesive\* to the heat sink with IC clip, as shown in the illustration below.



●When replacing IC102, 103, 105, 108, 202, 203, 205, 208, first clean the IC head and the inside of the heat sink with alcohol, then mount the heat sink and fill the heat sink indented portion with an epoxy type adhesive\*, as shown in the illustration below.

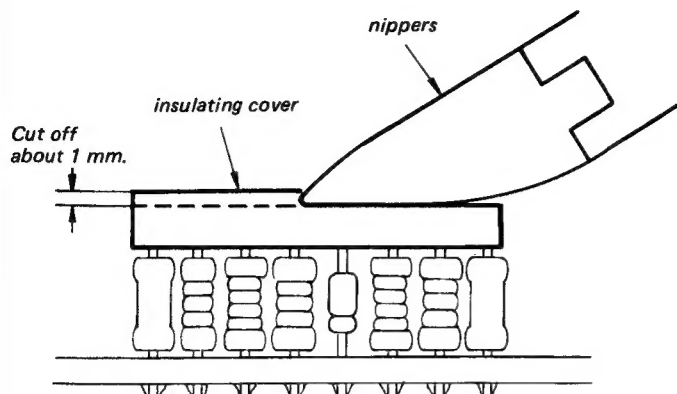


●When replacing Q636, 638, Q637, 639, fill the case as shown in the diagram with an epoxy type adhesive\* and insert the transistor.

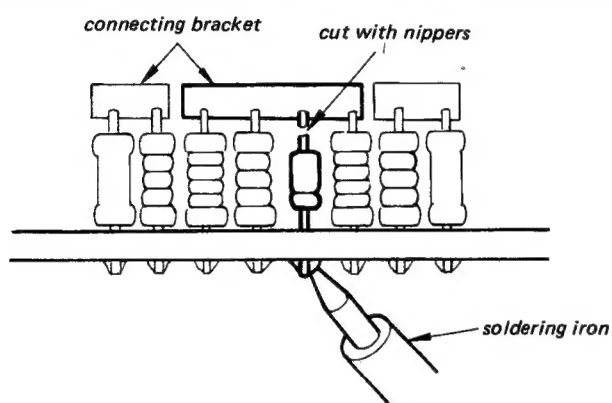
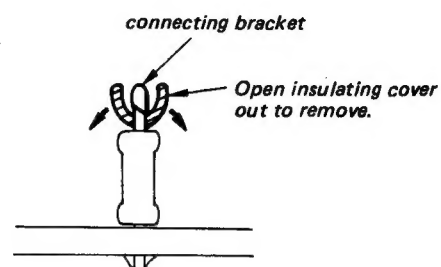


\* Epoxy type adhesive: Sony bond SC1000 or other quick drying 2 liquid compound.

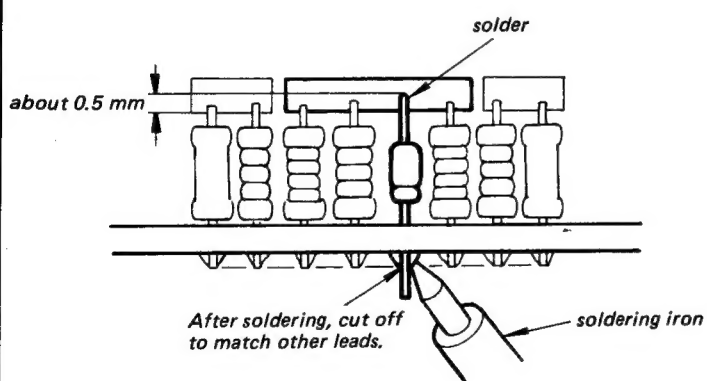
## REPAIR METHOD FOR HYBRID CIRCUIT BLOCK



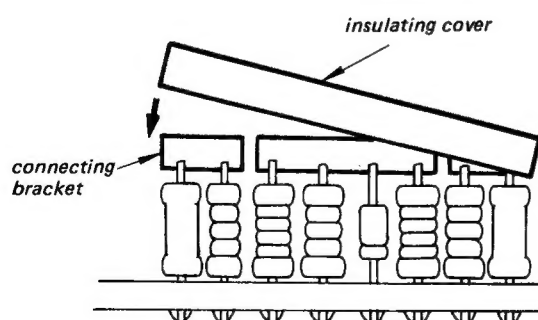
Using nippers, cut off the upper portion of the insulating cover about 1 mm, exposing the top of the connecting brackets.



Cut off the lead of the defective part with nippers. Remove solder and take out the defective part.

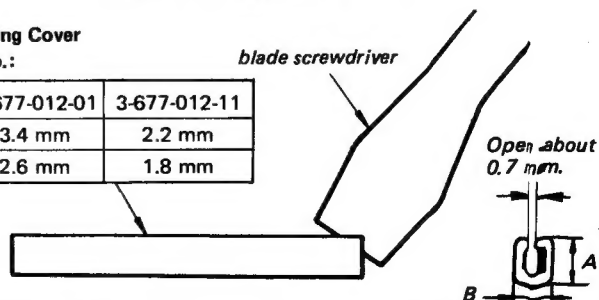


Insert the new part on the board and solder the lead to the board. Cut off the lead on the connecting bracket side so that it overlaps by about 0.5 mm, and solder to the connecting bracket.



Insulating Cover  
Part No.:

	3-677-012-01	3-677-012-11
A	3.4 mm	2.2 mm
B	2.6 mm	1.8 mm

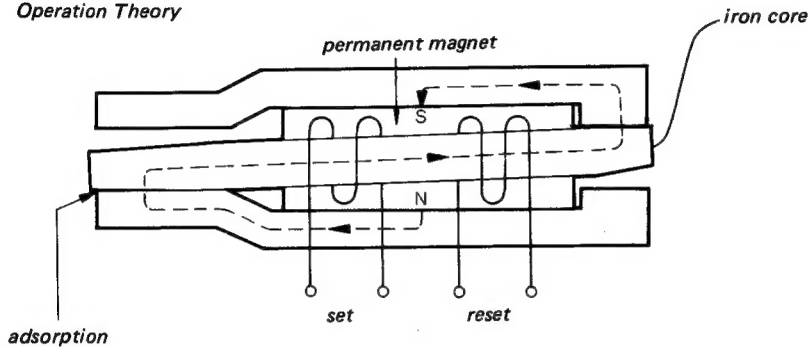


## Latching Type Relay

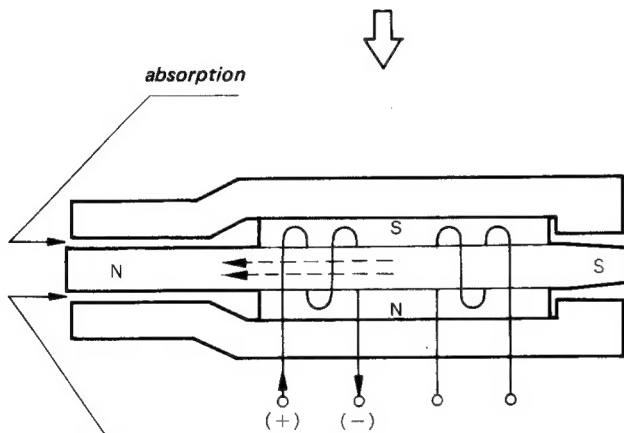
RL301, 601, 602 use a latching type relay. This relay has two exciting coils, set and reset, and a permanent magnet, so by exciting each coil momentarily, set or reset state is maintained.

A normal relay (hinge type) is driven only by the coil magnetomotive force, whereas the latching type relay uses the permanent magnet energy, resulting in low energy consumption and excellent anti-vibration and anti-shock characteristics.

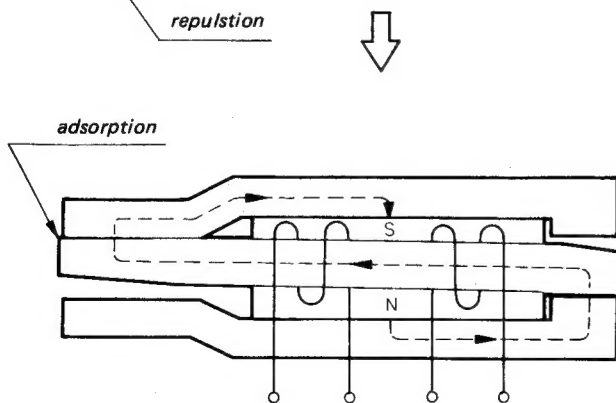
### Operation Theory



Reset state is shown.  
The iron core adsorbs in order to form the permanent magnet magnetic circuit.



Set coil excited.  
Iron core operates by electromagnetic force.



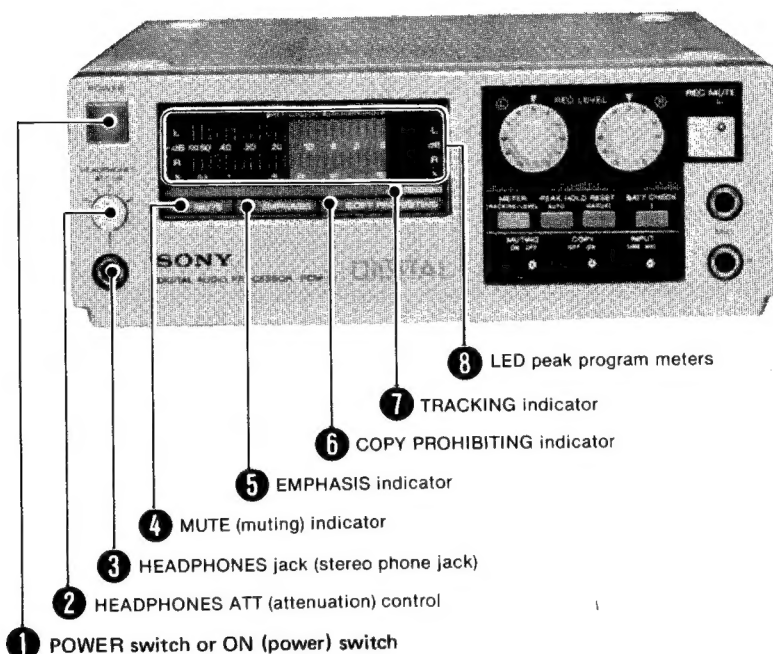
Set state is shown.  
The permanent magnet magnetic circuit is formed again, and iron core is adsorbed.

## SECTION 1 OUTLINE

### LOCATION AND FUNCTION OF CONTROLS

Before plugging in or attempting to operate the unit, we suggest that you familiarize yourself with all its switches and controls. Each number in the photo is keyed to the descriptive text.

#### FRONT PANEL



#### ❶ POWER switch or ON (power) switch

Press to turn on the power. The LED peak program meters will illuminate. To turn the power off, press the switch again.

#### ❷ HEADPHONES ATT (attenuation) control

This control adjusts the volume at the headphones. At the "0" position, the rated output is obtained. When this control is set to the "6" position, the level is reduced by 6 dB, and by setting it to "12", "18" or "24", the level is reduced by that amount of decibels from the rated output obtained at the "0" position.

#### ❸ HEADPHONES jack (stereo phone jack)

Headphones may be inserted either to monitor the input signals to be recorded or to listen to a recording in the playback mode.

#### ❹ MUTE (muting) indicator

If the video cassette recorder is not transporting tape at the proper playback speed (for example, when the tape first begins to move), or if many dropouts occur, this indicator will light up. When the indicator lights up with the MUTING switch set to ON, the muting circuit will activate.

#### ❺ EMPHASIS indicator

When recording and playback are made with this unit, the emphasis circuit incorporated in the unit activates during recording (pre-emphasis) and playback (de-emphasis) and the EMPHASIS indicator illuminates.

When a tape recorded without pre-emphasis with a PCM digital audio processor other than this unit is played back with this unit, the EMPHASIS indicator will not illuminate.

#### ❻ COPY PROHIBITING indicator

When a tape with a tape copy prohibiting code is played back, this indicator will light up to show that a digital tape copy cannot be made.

#### ❼ TRACKING indicator

When you press the METER selector, the lower LED peak program meter will be changed to a tracking meter, and the TRACKING indicator will light up.

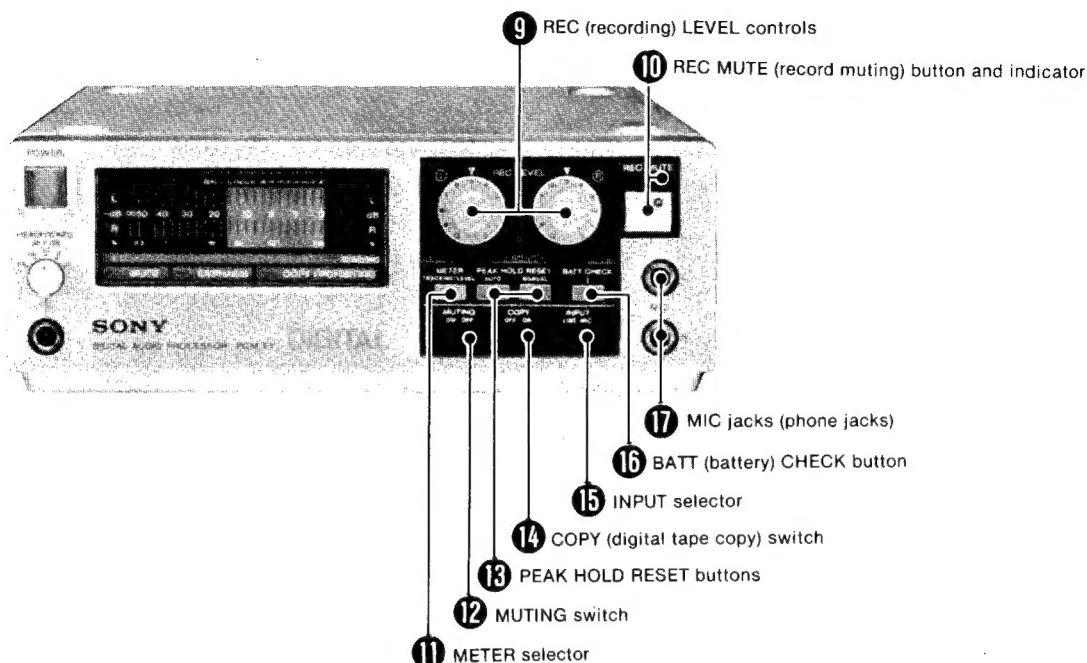
#### ❽ LED peak program meters

These meters show the peak input level of each channel during recording, and the recorded level during playback. They follow the transient peaks of high-level inputs that are too brief to be followed by conventional VU meters so that the optimum recording level can be accurately set. For easy reading, the meters hold the highest peak while indicating the varying levels lower than the peak.

While the BATT CHECK button is kept depressed, the upper meter for the left (L) channel shows the battery pack condition.

When the METER selector is pressed, the lower meter for the right (R) channel shows the tracking condition of the video cassette recorder.





## 9 REC (recording) LEVEL controls

These controls adjust the recording level. The left knob is for the left channel and the right knob for the right channel.

## 10 REC MUTE (record muting) button and indicator

Keep this button depressed to eliminate unwanted material and to insert a blank space during recording. While the button is kept depressed, the REC MUTE indicator will illuminate.

## 11 METER selector

Press to turn the LED peak program meters into a tracking meter. Each time the selector is pressed, the function of the meter will change.

## 12 MUTING switch

Normally set this switch to ON.

If the video cassette recorder is not transporting tape at the proper playback speed, or if many dropouts occur due to the mistracking of the video heads of the video cassette recorder, or due to scratches and dusts on the magnetic tape, the muting circuit will activate and the reproduced sound will be cut off.

If you do not want the reproduced sound to be cut off by the muting circuit, set the switch to OFF.

## 13 PEAK HOLD RESET buttons

You can choose either of two ways to have the peak level indicated: **When the AUTO button is pressed**, successive peaks are held for about 1.7 seconds, except when a higher peak occurs before 1.7 seconds have passed, in which case that peak is immediately indicated. **When the power is first turned on**, the AUTO peak indication mode will automatically operate.

**When the MANUAL button is pressed**, the peak level will be held on the scale until a higher peak occurs, and that peak will be held. To reset the peak held on the meter, just press this button. You will find this method of indicating the peak input useful when you want to know the highest peak of a tape or disc, or when you want to know both the highest peak as well as the intermittent input levels during live recording.

## 14 COPY (digital tape copy) switch

Set this switch to ON for digital-to-digital tape copy, with absolutely no deterioration in signal quality, using a pair of video cassette recorders and the COPY OUT jack at the rear.

**Be sure to set this switch to OFF except during digital tape copy.** With this switch set at the ON position, no signal is obtained at the VIDEO OUT jack.

## 15 INPUT selector

LINE: to record through the LINE IN jacks at the rear.

MIC: to record through the MIC jacks.

## 16 BATT (battery) CHECK button

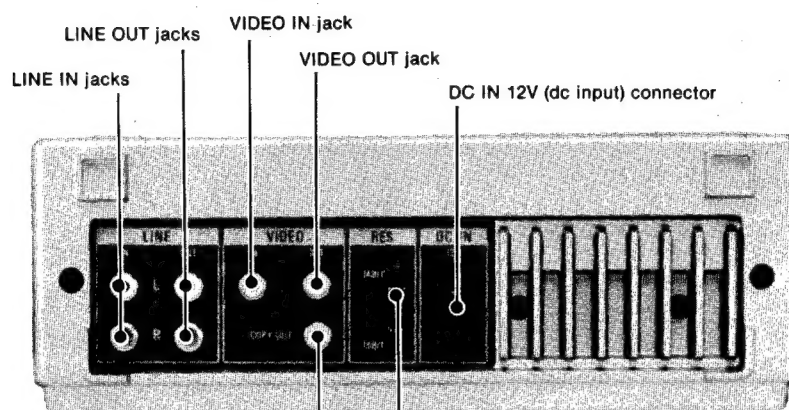
While this button is kept depressed, the upper meter shows the battery pack condition.

## 17 MIC jacks (phone jacks)

Any low-impedance microphone equipped with a phone plug may be used. If your microphone is equipped with a mini plug, you will need a plug adaptor.



## REAR PANEL

**COPY OUT (tape copy output) jack**

To perform digital-to-digital tape copy, connect this jack with the video input jack of the video cassette recorder for recording so that when the COPY switch is set to ON, playback signals in which errors are corrected and/or concealed are obtained.

**Be sure not to use this jack except during digital tape copy.** Normal recording and playback cannot be performed using this jack.

**RES (resolution) selector**

Selects the resolution for recording.

**14 BIT:** for recording in accordance with the technical specifications of the Electronic Industries Association of Japan (EIAJ) which has adopted the 14-bit linear quantization format. Set the selector to this position when the tape recorded with this unit is to be played back using another PCM digital audio processor which conforms to the 14-bit quantization format of the EIAJ.

**16 BIT:** for recording and playing back using this unit with a wider dynamic range and less distortion.

Normally set the selector to this position.

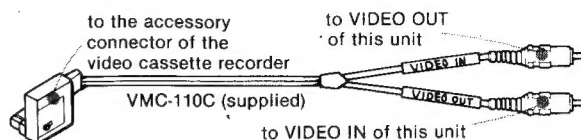
During playback, it is not necessary to select the position of this selector, since the 14-bit or 16-bit format used for recording is automatically selected.

## SYSTEM CONNECTIONS

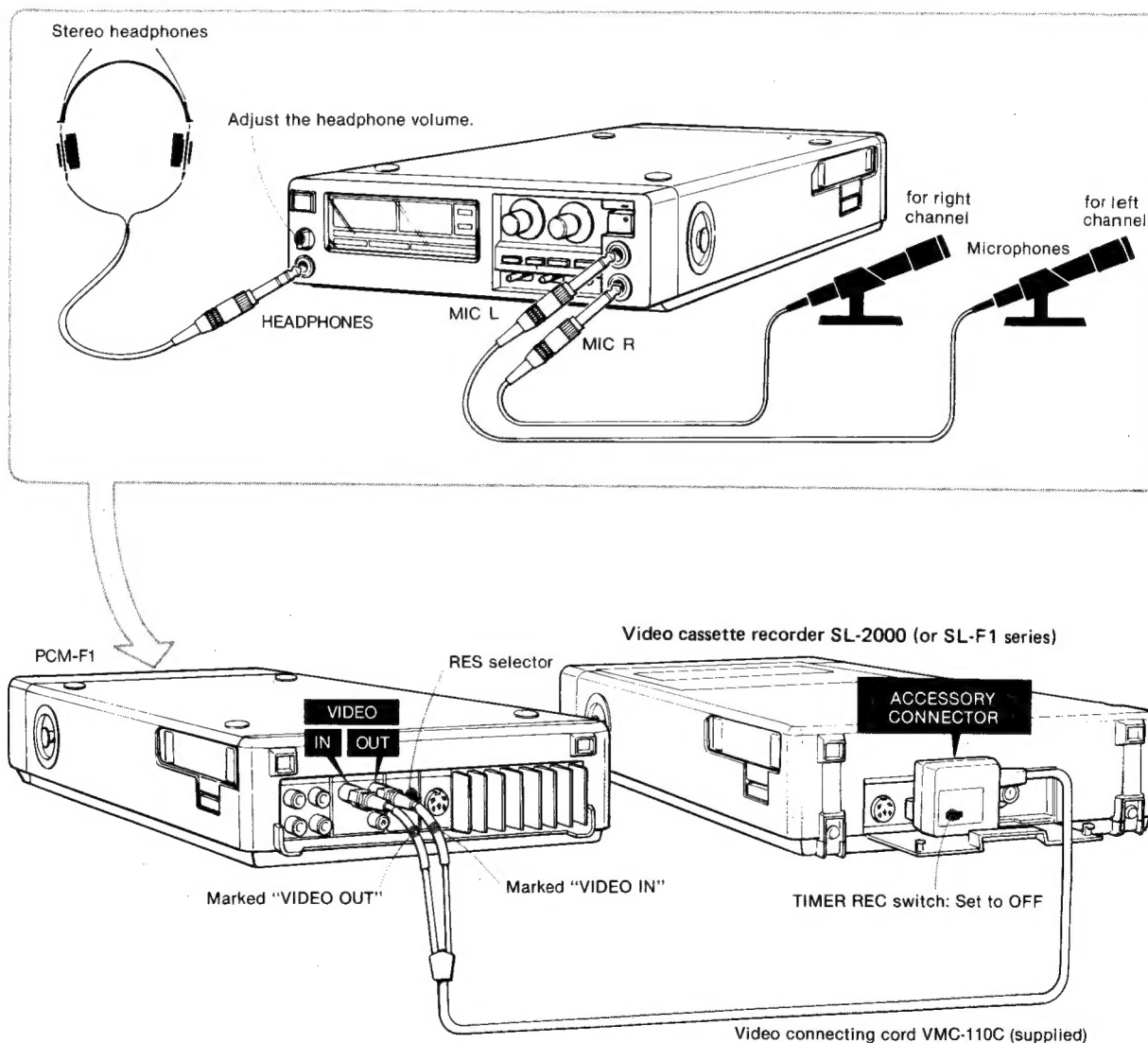
### CONNECTION NOTES

- Turn off the amplifier before making connections.
- The supplied connecting cords with red and white plugs are for audio signals, and those with yellow plugs are for video signals.
- Be sure to connect the red plug of the supplied audio connecting cord to the right-channel [R] jack and the white plug to the left-channel [L] jack.
- To connect the unit with the Sony SL-2000 (or SL-F1 series) video cassette recorder, use the supplied VMC-110C video connecting cord. To connect the unit with a video cassette recorder other than the SL-2000 (or SL-F1 series), use the supplied VMC-1S video connecting

connecting cords with phono plugs of the VMC-110C are labelled to with a BNC-type plug and phono plug). The yellow plugs of the VMC-110C are labelled to indicate the signal flow. The plug labelled VIDEO IN should be connected to the VIDEO OUT jack of this unit and the one labelled VIDEO OUT to the VIDEO IN jack.



### CONNECTION WITH THE SONY SL-2000 (or SL-F1 SERIES) VIDEO CASSETTE RECORDER (FOR OUTDOOR LIVE RECORDING)

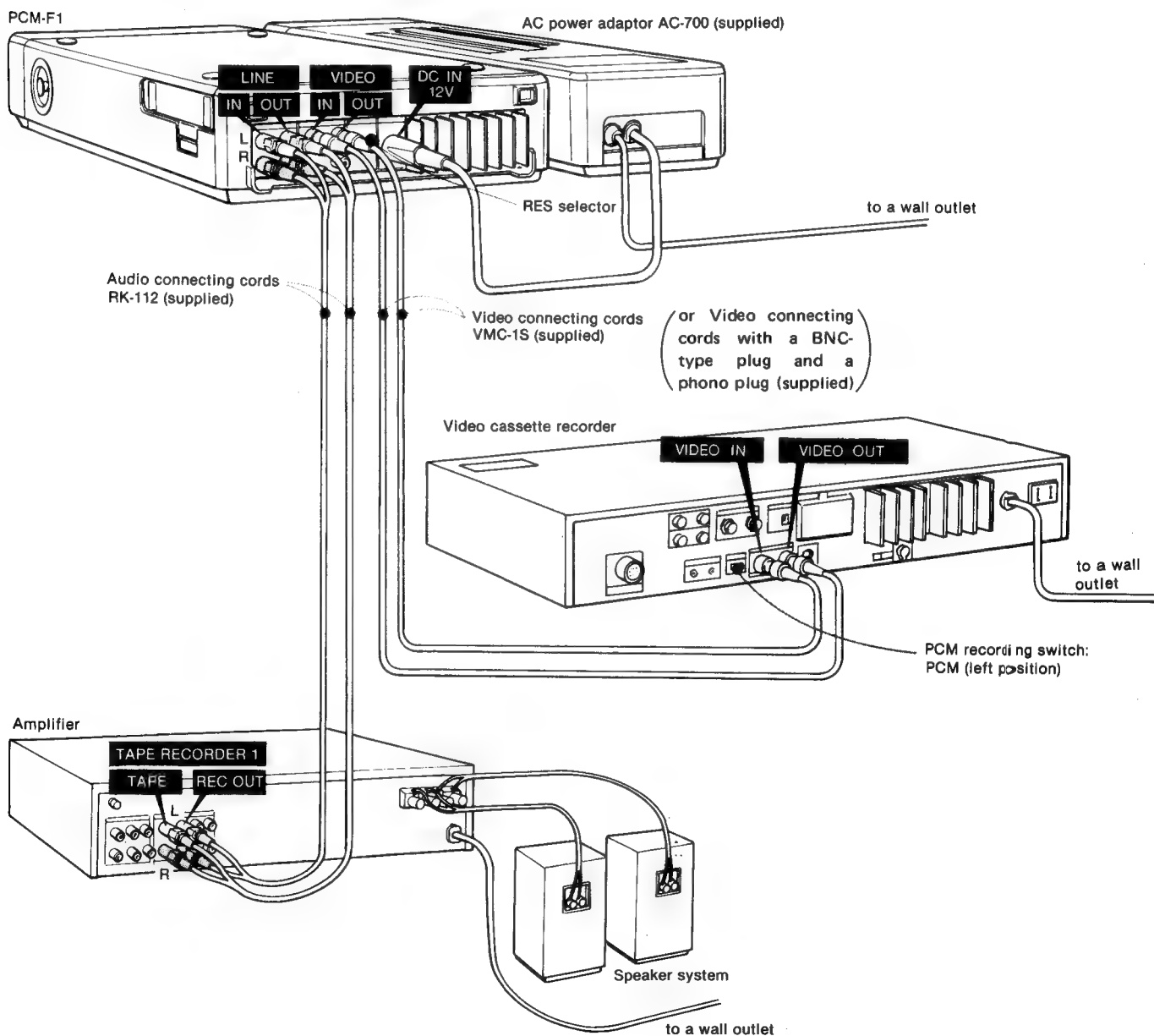


- Be sure to connect both the VIDEO IN and VIDEO OUT jacks to the video cassette recorder. If the VIDEO IN jack of this unit is not connected to the video output of the video cassette recorder, recording is possible but you cannot monitor the recording, and the peak program meters will not deflect.

- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- Keep the connecting cords away from the power cords or speaker cords to avoid hum pick-up, and maintain a moderate separation between the connecting cords and any antenna lead-in to avoid possible noise pick-up. Keep the cables as short as practical.
- We recommend using the Sony SL-2000 (or SL-F1 series) portable video cassette recorder or any other Sony video cassette recorder.

● For detailed information about connections of the video cassette recorder and amplifier, refer to the instruction manual supplied with each unit.

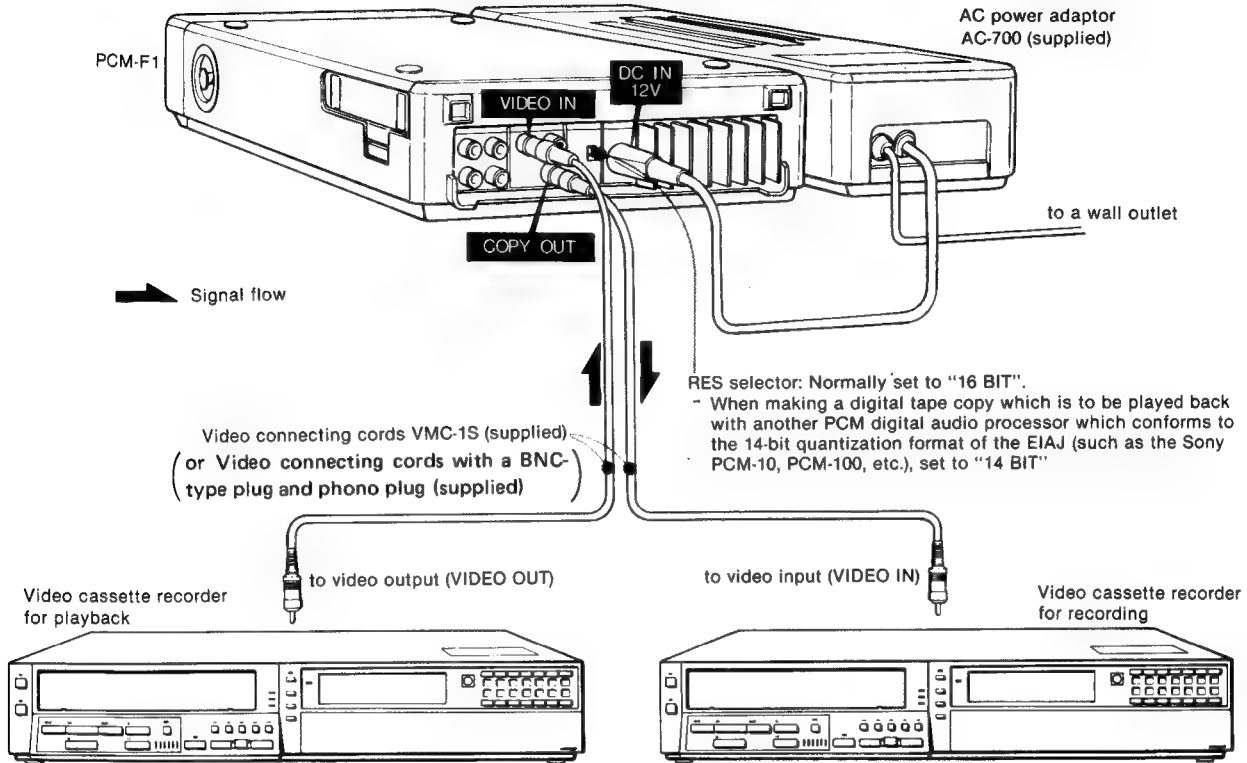
## CONNECTION WITH A VIDEO CASSETTE RECORDER OTHER THAN THE SL-2000 (or SL-F1 SERIES)



## DIGITAL TAPE COPY

Using the COPY OUT jack of this unit and a pair of video cassette recorders, you can make digital-to-digital tape copy with absolutely no deterioration in signal quality.

### CONNECTION



### OPERATING PROCEDURE

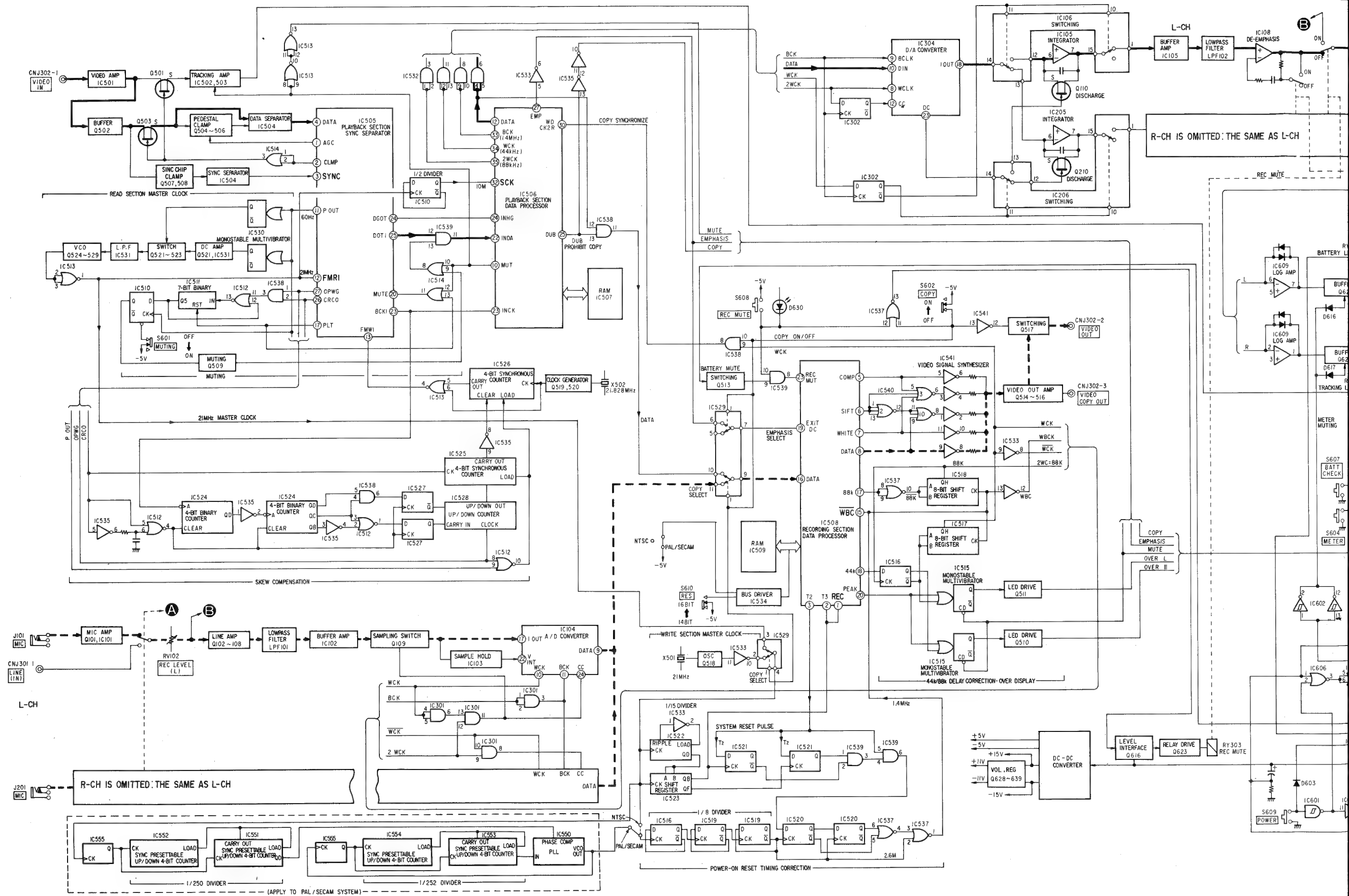
- 1 Turn on the unit and video cassette recorders.
- 2 Insert a recorded tape into the video cassette recorder for playback and a blank tape into the video cassette recorder for recording.
- 3 Set the COPY switch of the PCM-F1 to ON.
- 4 Start the playback of the video cassette recorder for playback and the recording of the video cassette recorder for recording. Copying will begin.

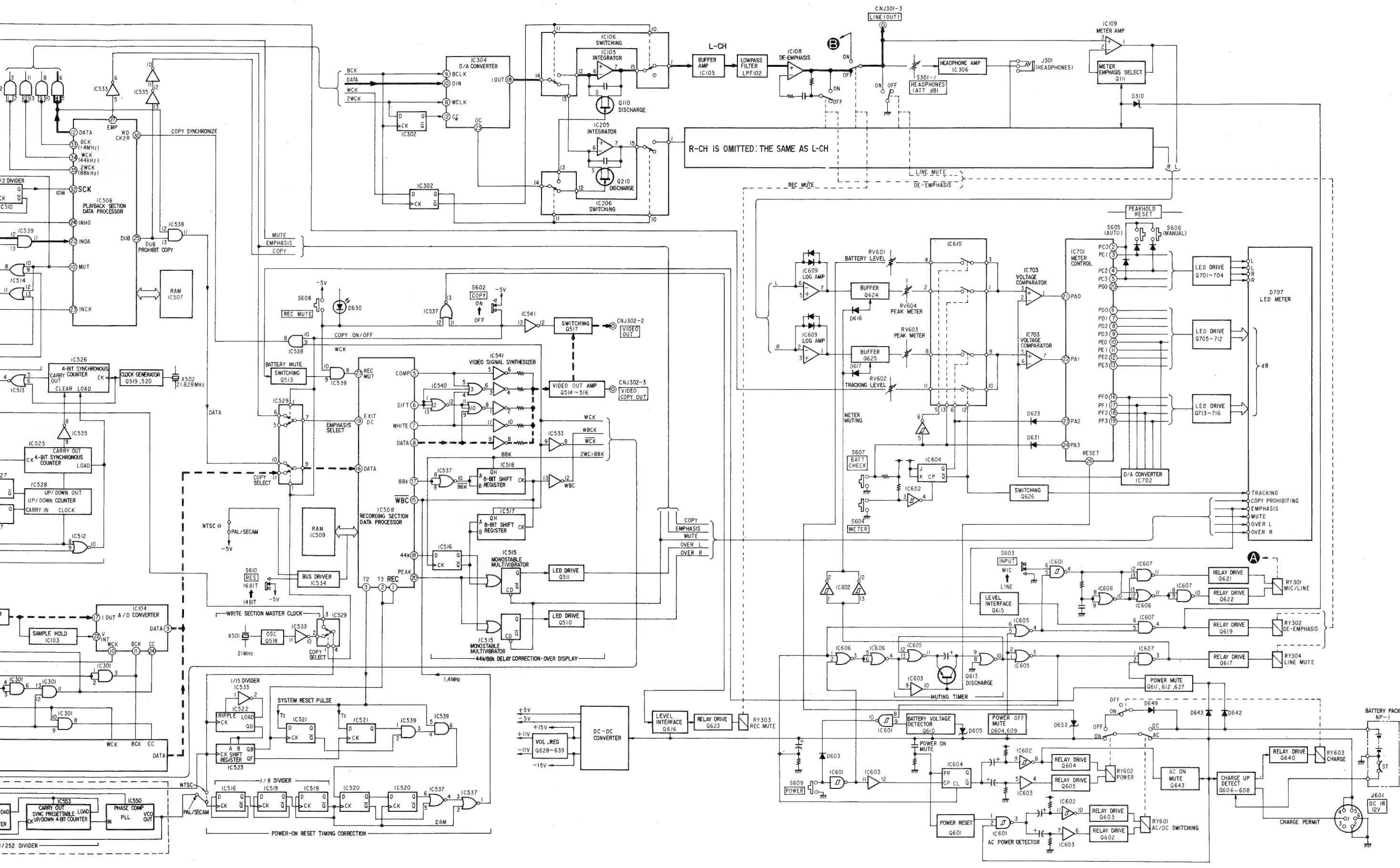
After the tape copy has been completed, be sure to set the COPY switch to OFF.

### Important points to remember

- The reproduced sound being monitored through the headphones or speakers with the COPY switch set to ON may be somewhat more distorted than when played back and monitored with the switch set to OFF. However, the tape will be copied with no deterioration in signal quality.
  - No recording level adjustment is necessary when making a digital-to-digital tape copy.
  - A tape on which the tape copy prohibiting code has been recorded cannot be duplicated. When such a tape is played back, the COPY PROHIBITING indicator will light up.
  - Be sure to set the COPY switch to ON for digital tape copy. Digital-to-digital tape copy cannot be performed with the COPY switch set to OFF.
- Do not move the COPY switch during tape copy or during normal recording and playback.

## BLOCK DIAGRAMS

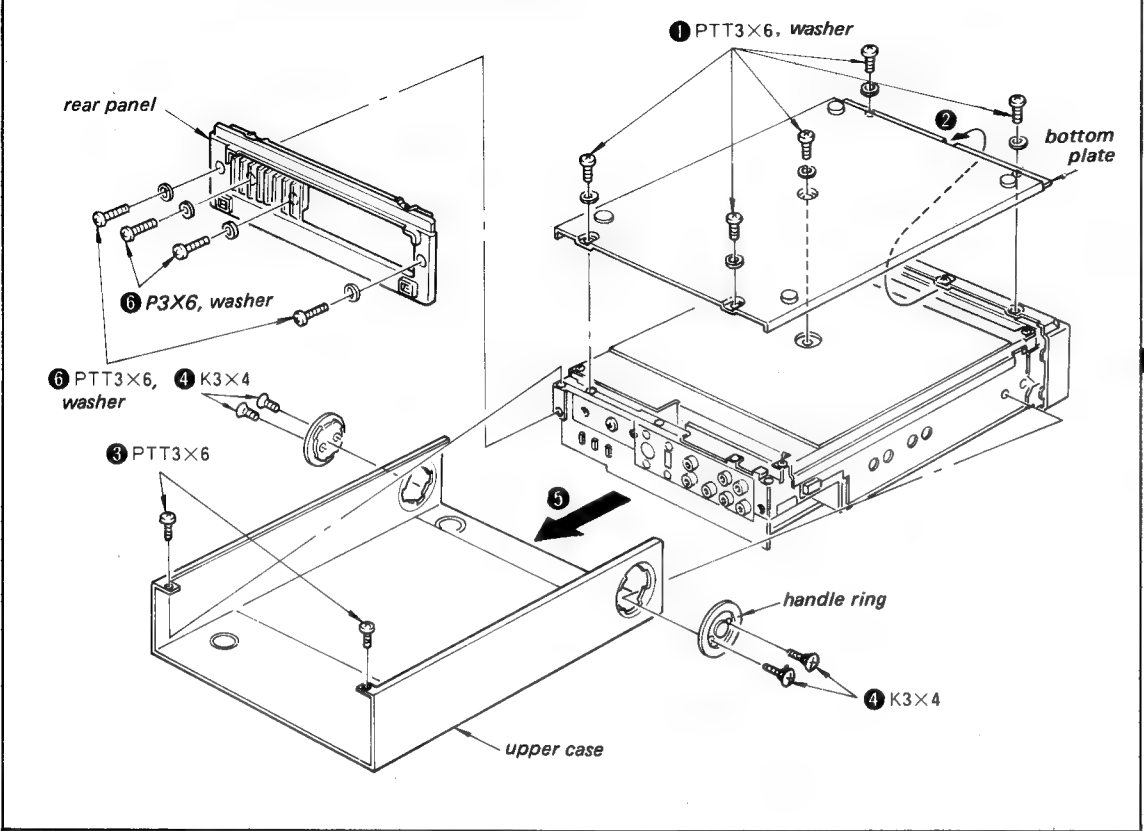




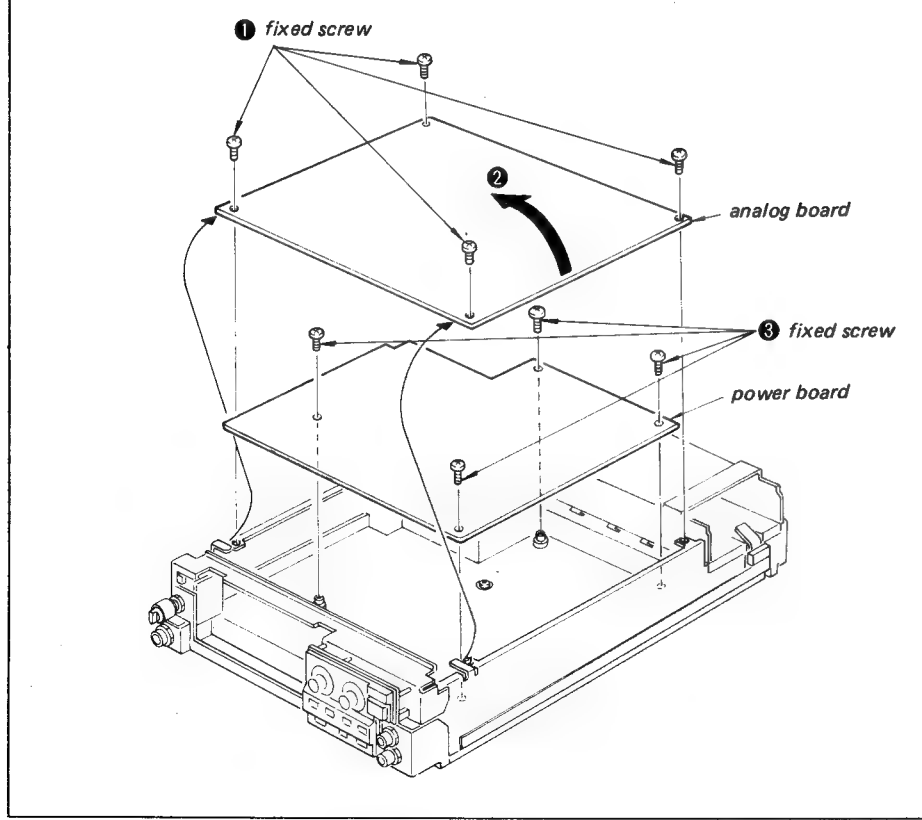
SECTION 2  
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

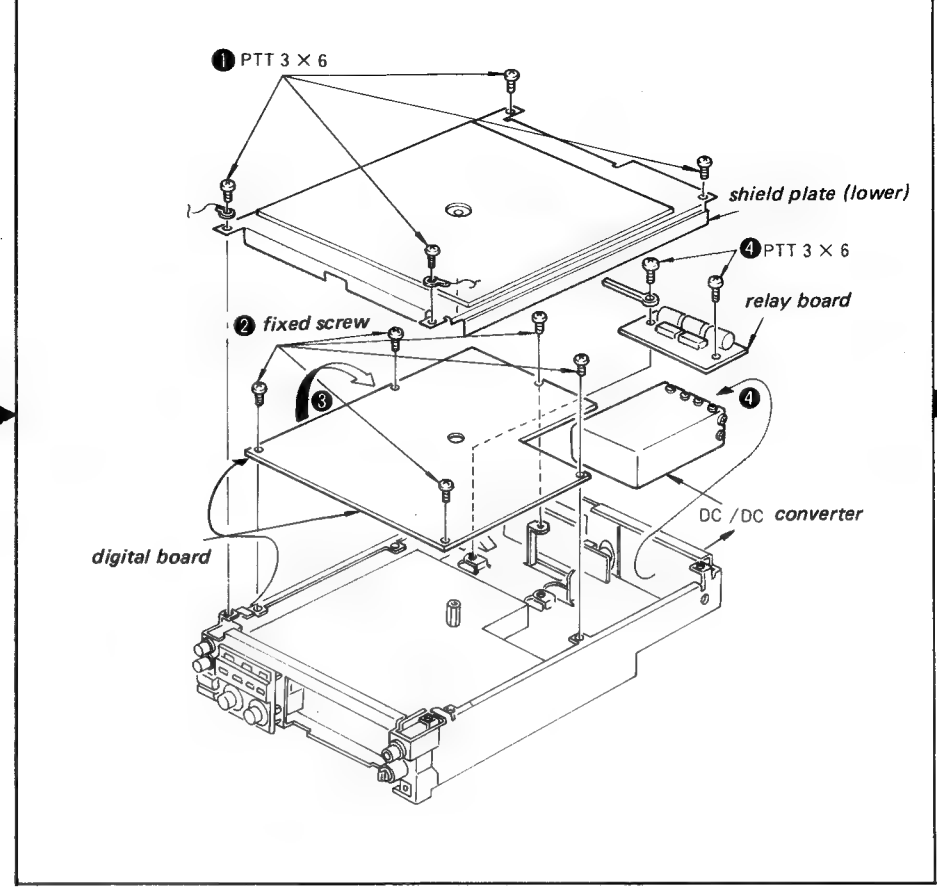
BOTTOM PLATE, UPPER CASE, REAR PANEL



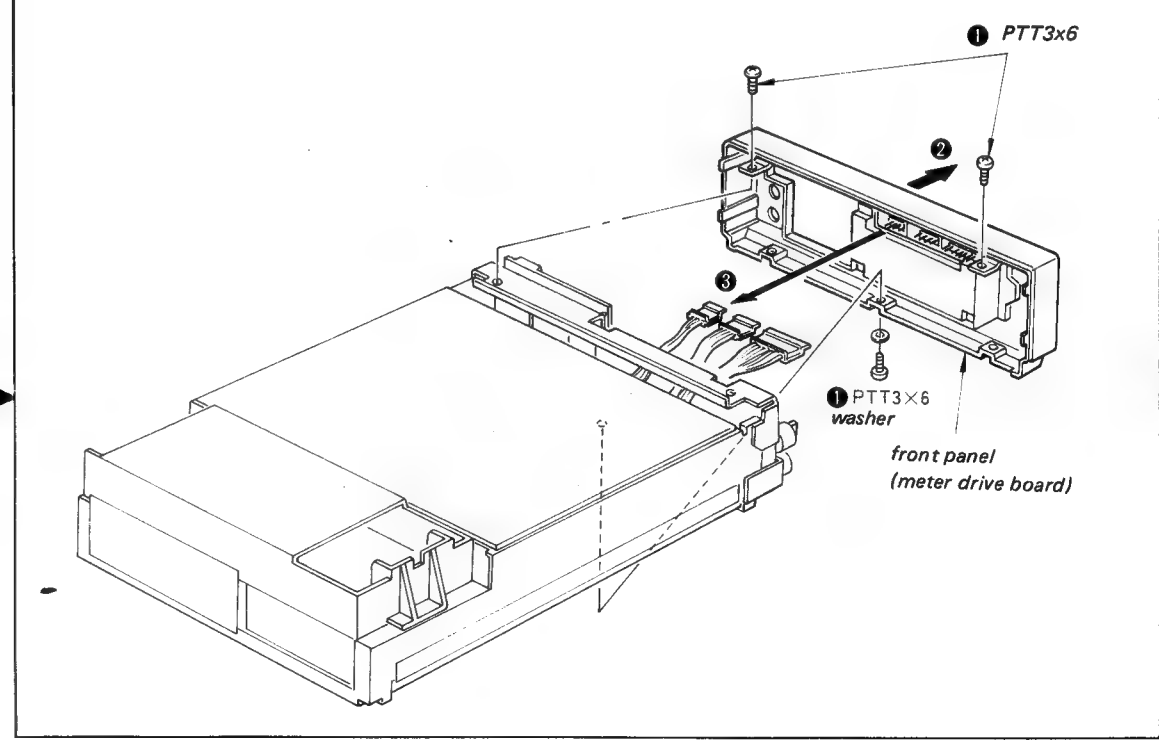
ANALOG BOARD, POWER BOARD



DIGITAL BOARD, RELAY BOARD, DC/DC CONVERTER

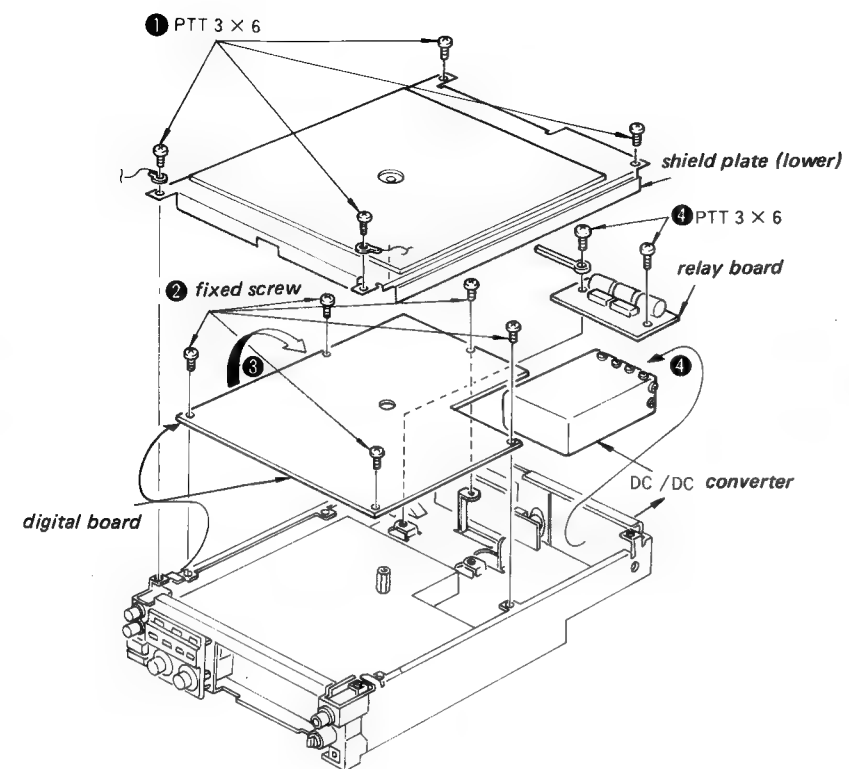


FRONT PANEL (METER DRIVE BOARD)

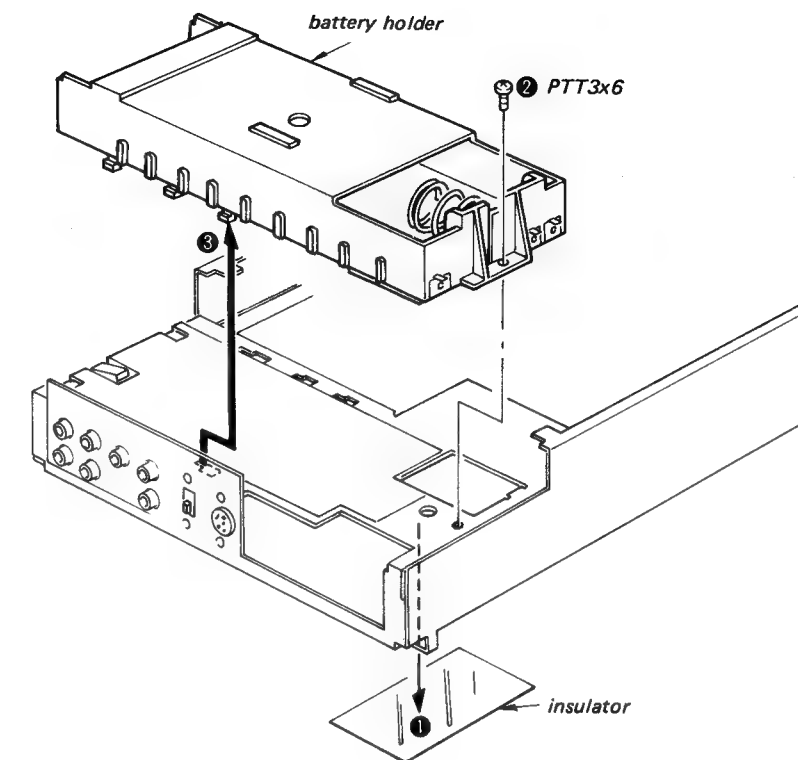




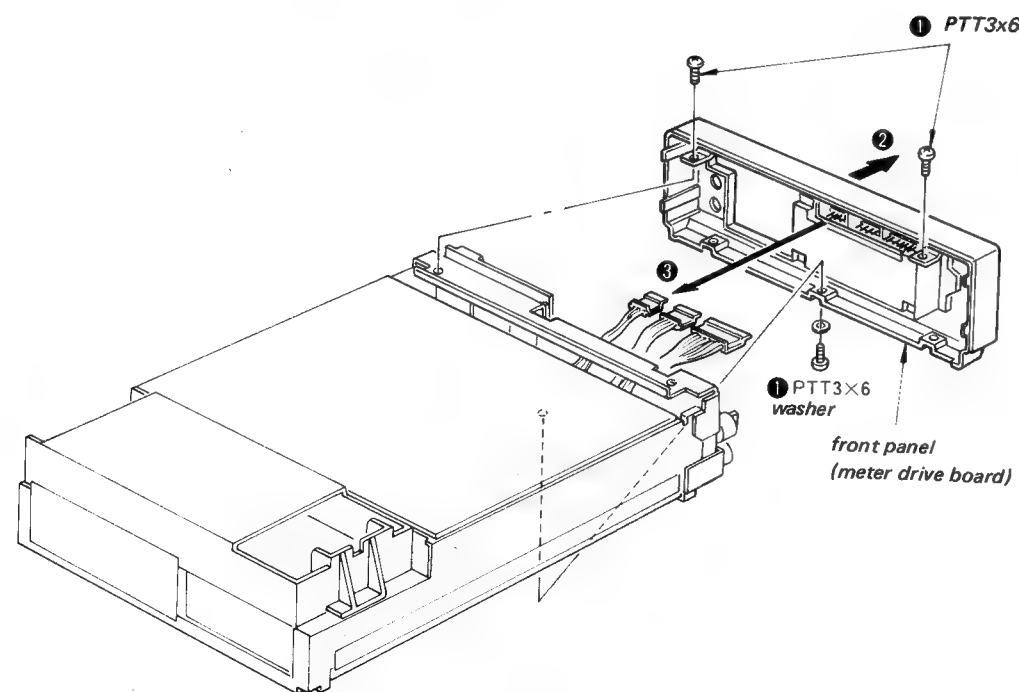
DIGITAL BOARD, RELAY BOARD, DC/DC CONVERTER



BATTERY HOLDER

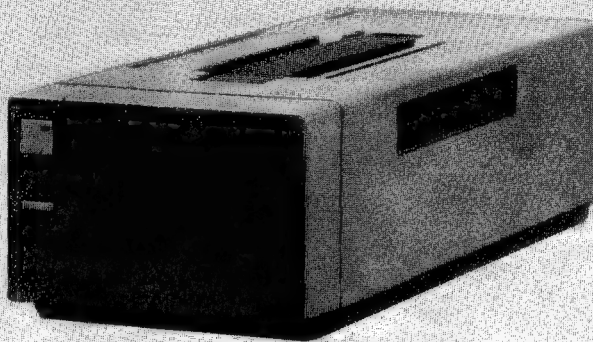


FRONT PANEL (METER DRIVE BOARD)



# AC-700

*US Model  
Canadian Model  
AEP Model  
UK Model*



## AC POWER ADAPTOR

### SPECIFICATIONS

<b>Power Requirements:</b>	US, Canadian Model ---- AC 120V ac, 60Hz AEP Model ----- AC 220V ac, 50/60Hz UK Model ----- 240V ac, 50/60Hz
<b>Rated Power:</b>	79W
<b>Output Voltage:</b> (with AC Power Adaptor)	DC 14V $\pm 5\%$ (with rated power $\pm 10\%$ input, 1.6A dc load)
<b>Output Current:</b> (at Charging mode)	DC 2.1A $\pm 10\%$ (at battery voltage 10–16.5V)
<b>Dimensions:</b>	Approx. 107x80x305 mm (w/h/d) (4 $\frac{1}{4}$ x3 $\frac{1}{4}$ x12 $\frac{1}{8}$ inches)
<b>Weight:</b>	Approx. 3.2kg (7 lbs 1oz) net

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### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

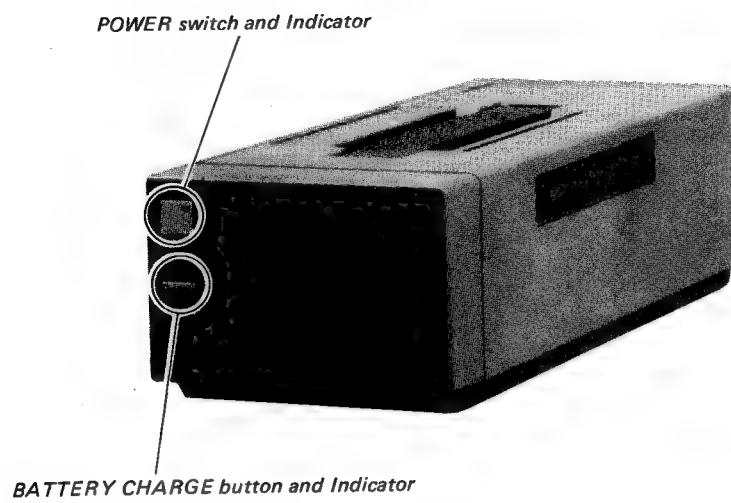


# SONY®

## SERVICE MANUAL

# AC-700

## LOCATION



## SECTION 1 CIRCUIT DESCRIPTION

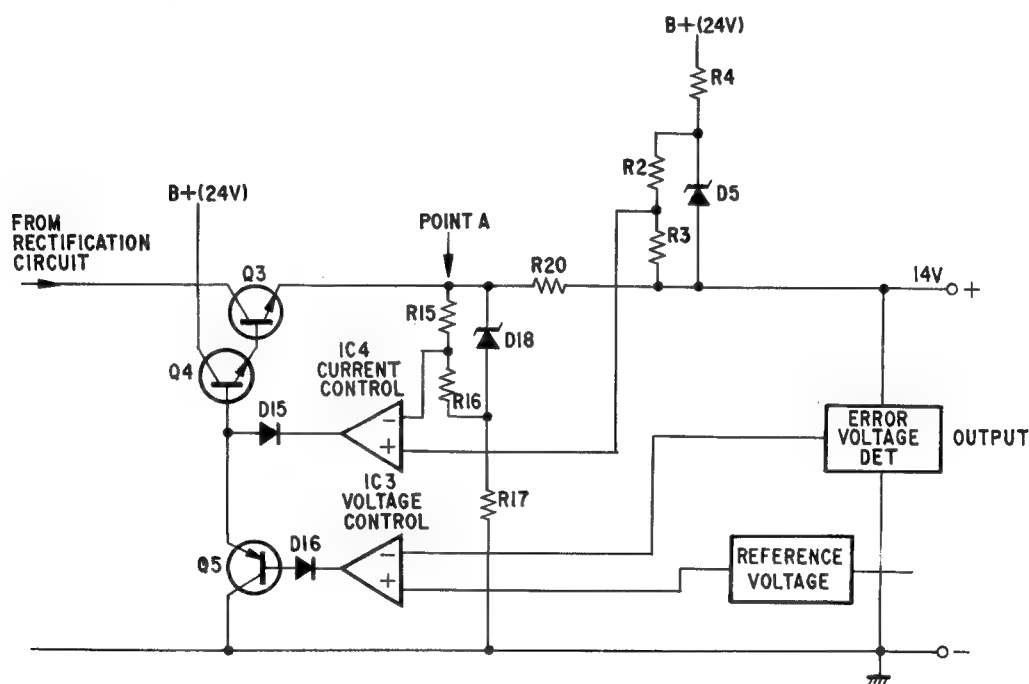
AC-700 is the ac power adaptor for PCM-F1 (digital audio processor). It also has the capability to charge the NP-1 rechargeable battery pack for PCM-F1.

### — AC Power Adaptor

Figure 1 is the voltage, current and control section circuit diagram for AC-700. When PCM-F1 is connected to AC-700 operating as an AC power adaptor, reference voltage and load voltage are compared by the voltage control op amp (IC3), which controls series transistor Q3 so that the load voltage becomes 14V regulated voltage.

If load current is less than 2.1A (1.6A is normal) the current control op amp IC4 uses point A as the reference, and because the noninverted input terminal is biased to the positive side and the inverted input terminal to the negative side, the output terminal goes high and D15 cuts off.

Therefore, IC4 does not affect the operation of series transistor Q3.



(Figure 1)

### — Charging

Figure 2 is a circuit diagram of the charging control section prepared for charging. When the BATTERY CHARGE button (SW2) is pushed, the charging control IC (IC2) trigger terminal is grounded, flip-flop is set and the output terminal goes high.

Then the CHARGE lamp (LED2) lights up, Q2 goes on and Q6 goes off.

There are two zener diodes, D20 (for AC power adaptor) and D21 (for charging) in the reference voltage circuit, which are switched by Q6.

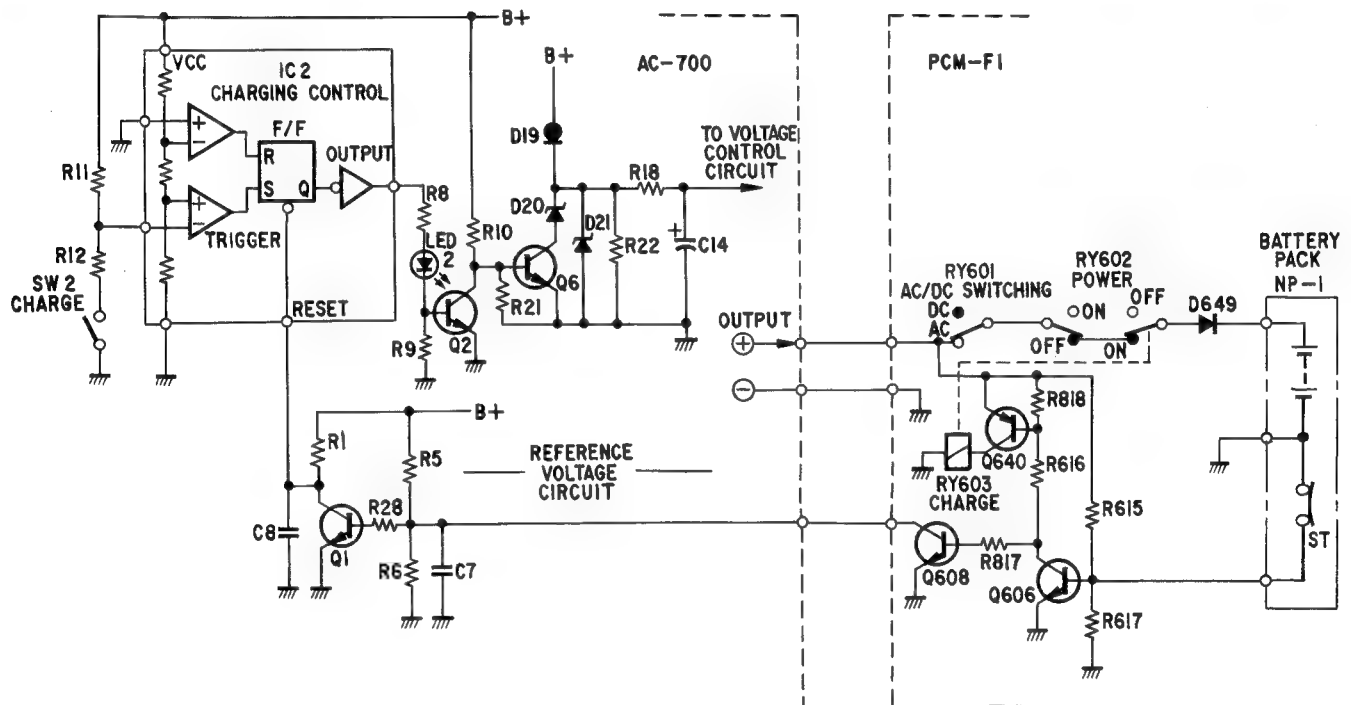
The zener voltage for D20 is lower than that of D21. When Q6 is on, D20 and D21 are connected parallel, but because D20 zener voltage is lower, D21 does not operate.

When Q6 is off (during charging), D20 is cut off and D21 generates reference voltage. Therefore, during charging, higher output voltage than for when operating as an AC power adaptor is supplied to the battery pack (NP-1) which is the load. However, when charging current goes over 2.1A,

the voltage drop generated at current detection resistor R20 (see Fig. 1) is applied to the current control op amp's (IC4) noninverted input terminal and the output terminal shifts to low level. Then D15 turns on, series transistor Q3 VCE gets larger and output voltage drops. As a result, charging current does not go over 2.1A but becomes 2.1A regulated current. When charging current is below 2.1A the load voltage becomes 17V regulated voltage because of the voltage control circuit.

When charging is completed, the internal temperature of battery pack NP-1 rises, the built-in thermostat ST operates and turns off.

When ST goes off, the PCM-F1 Q606 (see Fig. 2) goes on, Q640 goes on, RY603 is set and the charging circuit is interrupted. Then Q608 goes off, AC-700, Q1 goes on, IC2 reset terminal becomes 0V (low level), the output terminal becomes 0V (low level) and LED2 goes out to indicate charging completed.

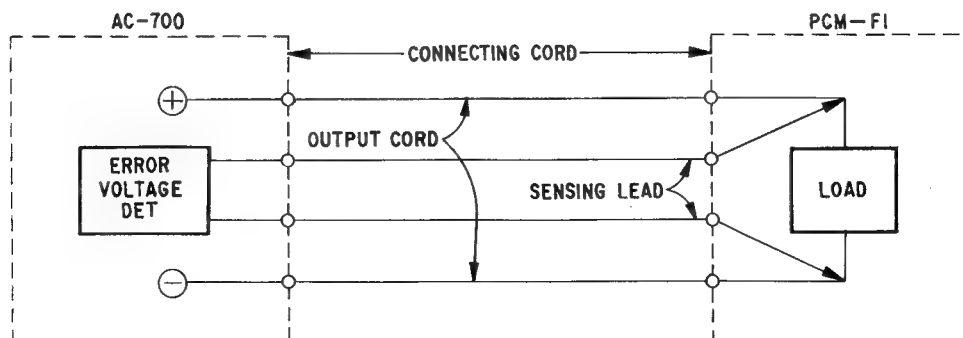


(Figure 2)

## Remote Sensing

AC-700 utilizes remote sensing in the voltage control section error voltage detection circuit. When the load current for the output cord connecting the regulated voltage power supply output terminal and the load is large, an exceptionally large voltage drop results, adversely affecting the load side.

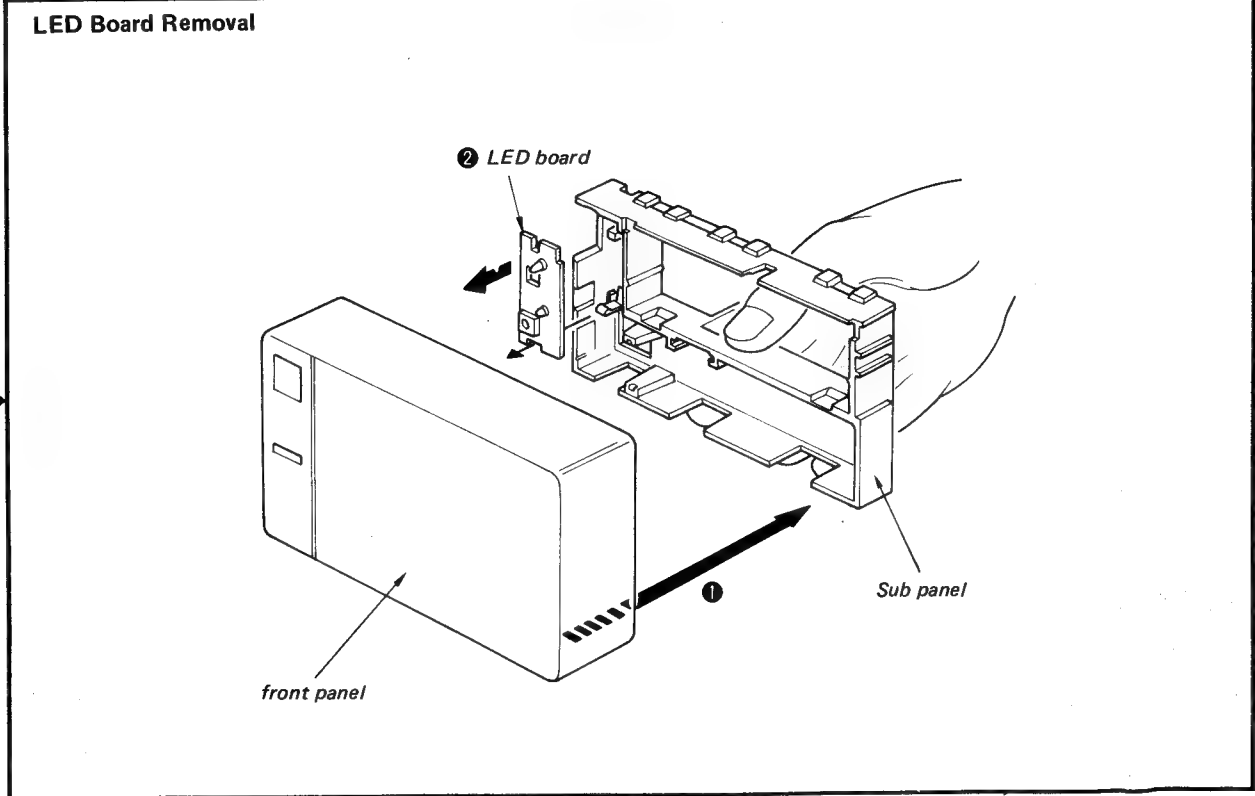
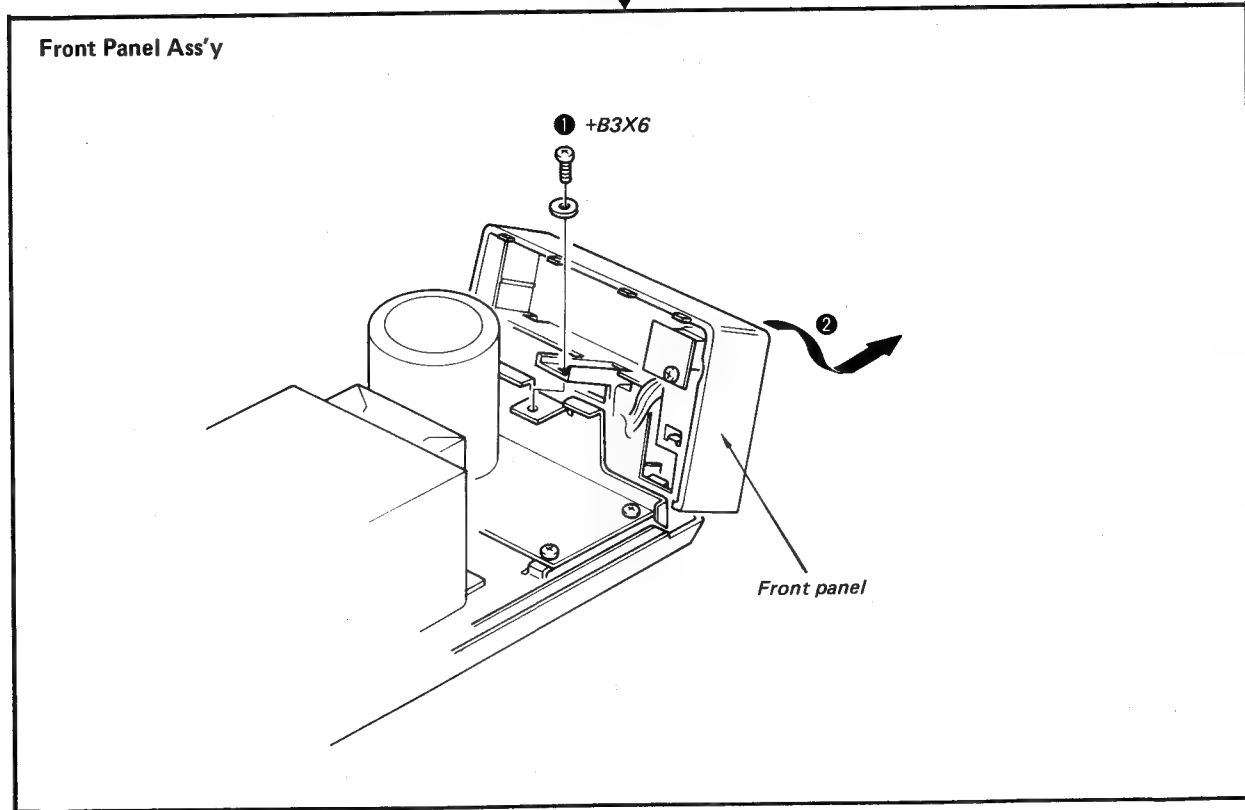
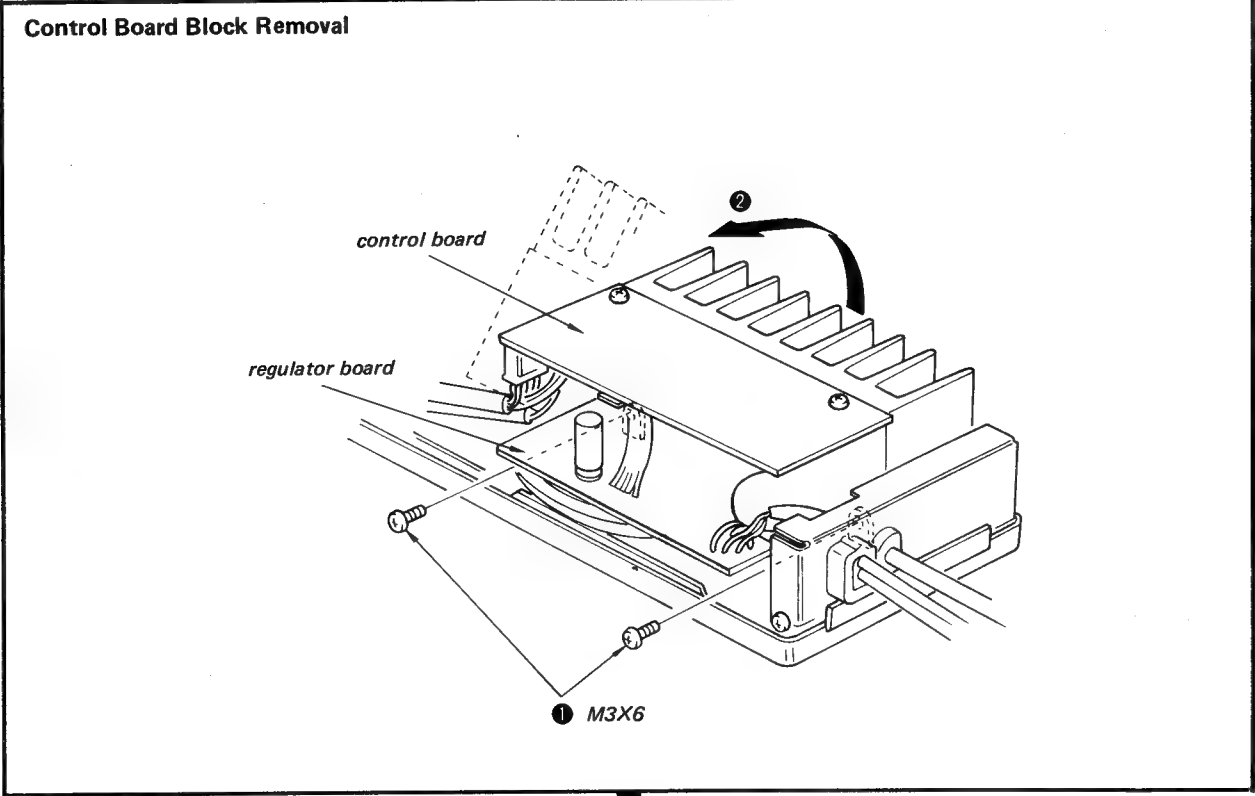
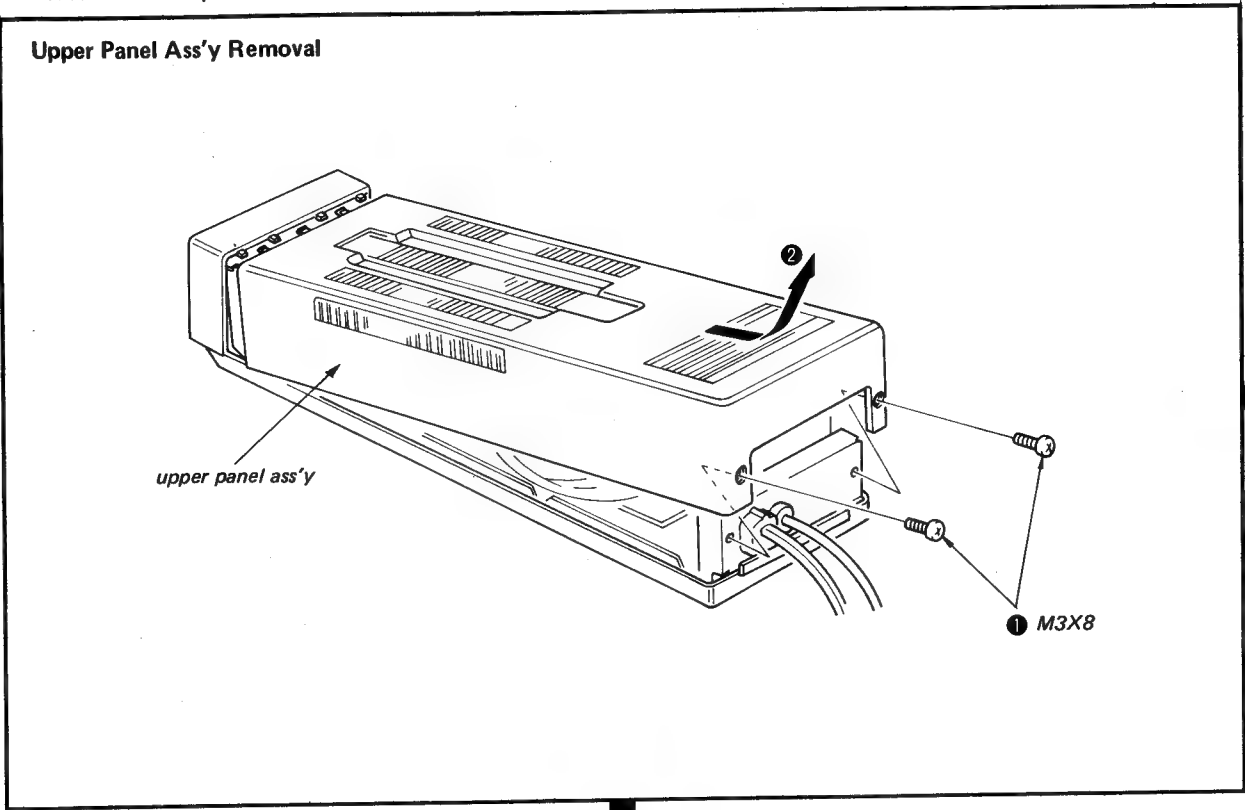
On AC-700, the error voltage detection is led not from the output terminal but through the connecting cord sensing lead directly from the PCM-F1 power supply input terminal, so the voltage drop because of the output cord and connector contact resistance is compensated for.



(Figure 3)

SECTION 2  
DISASSEMBLY

● Remove the parts in the numerical order.



SECTION 3  
DIAGRAMS  
B

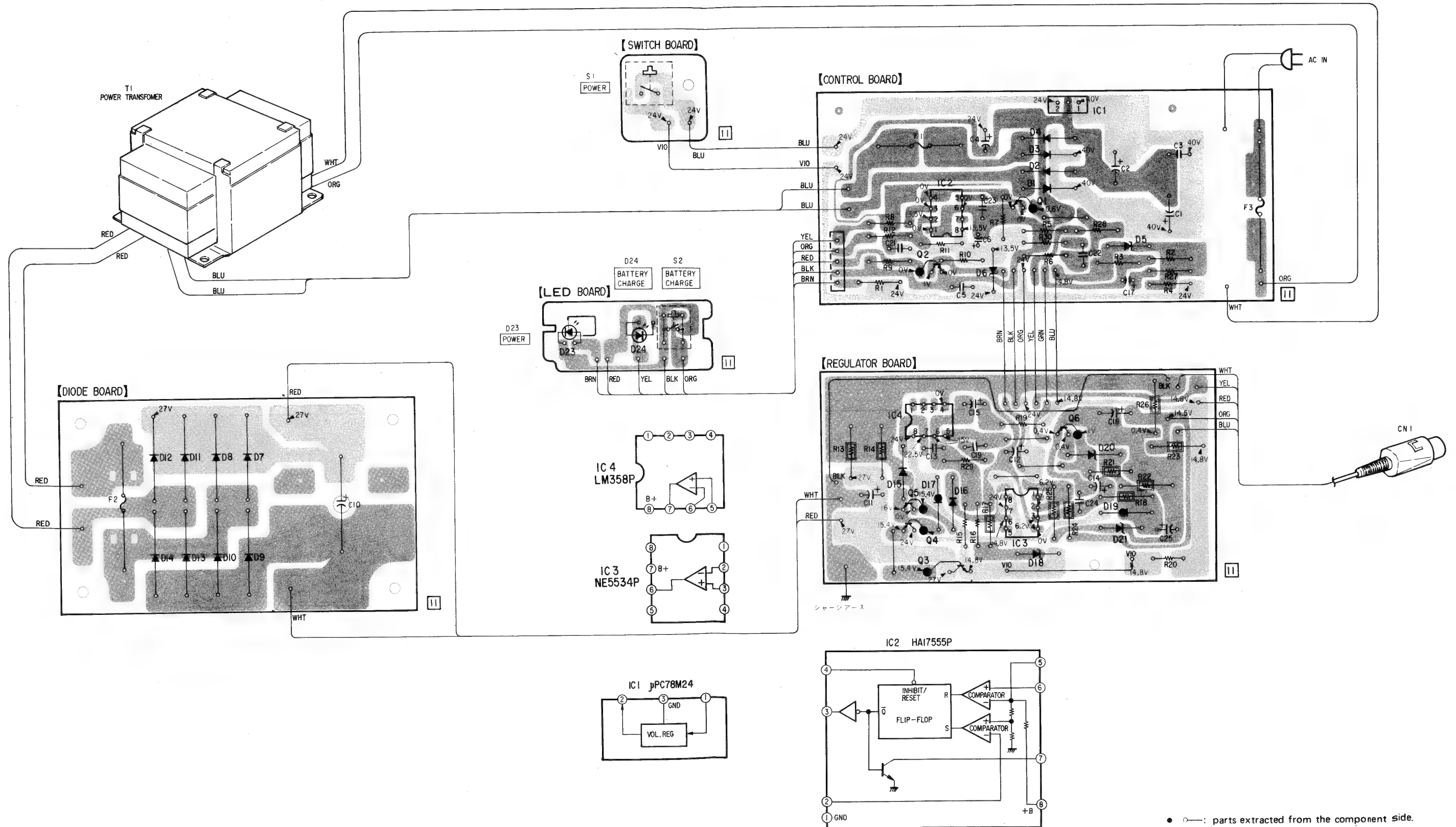
US Model  
Canadian Model

AC-700 AC-700

US Model  
Canadian Model

3-1. MOUNTING DIAGRAM

Q IC	12	11	8	7	23	24	15	17	16	6	3	4	IC2	5	2	1	IC1	6	4	3	2	1	20	5	19	21	Q IC
D	14	13	10	9																							D





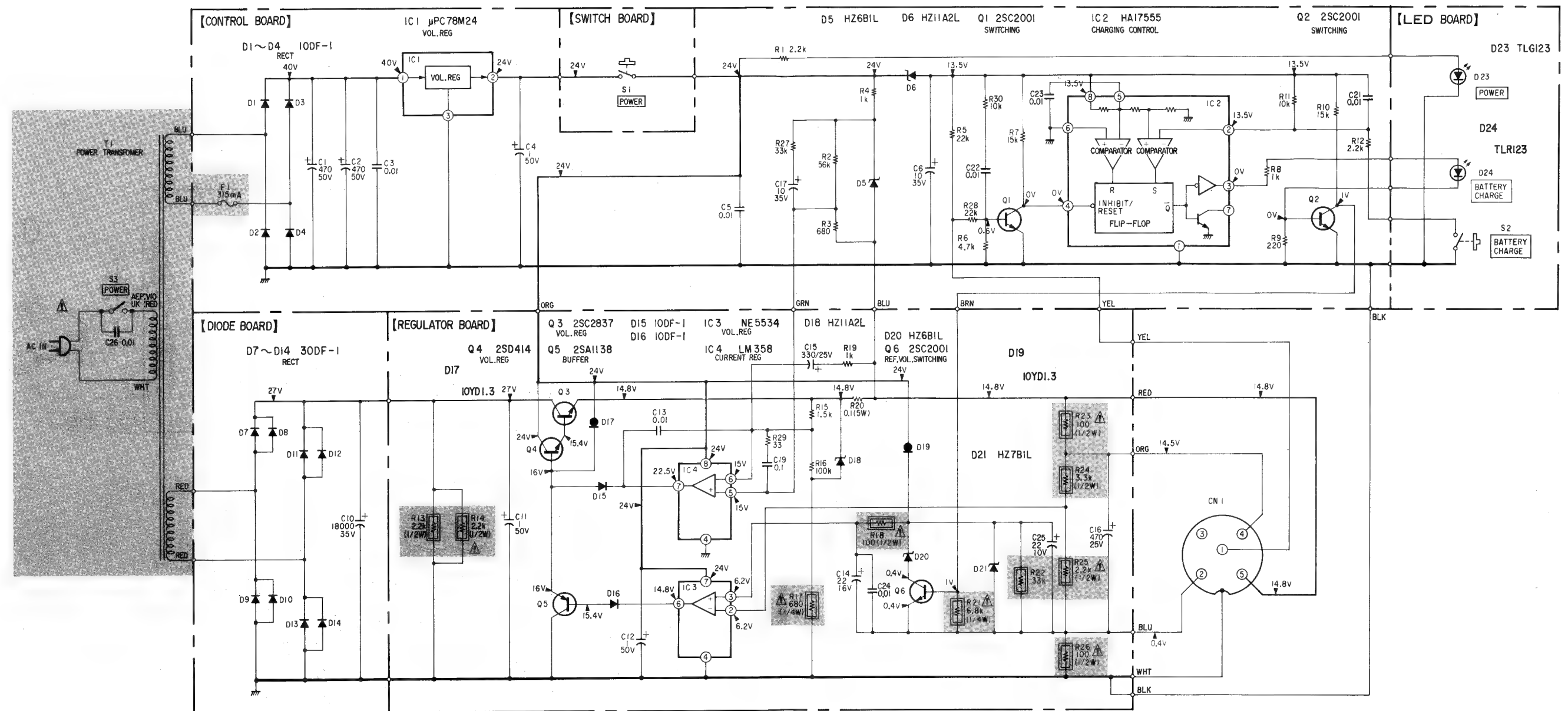
# 3-2. SCHEMATIC DIAGRAM


US Model  
Canadian Model

AC-700

AC-700




US Model  
Canadian Model



Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

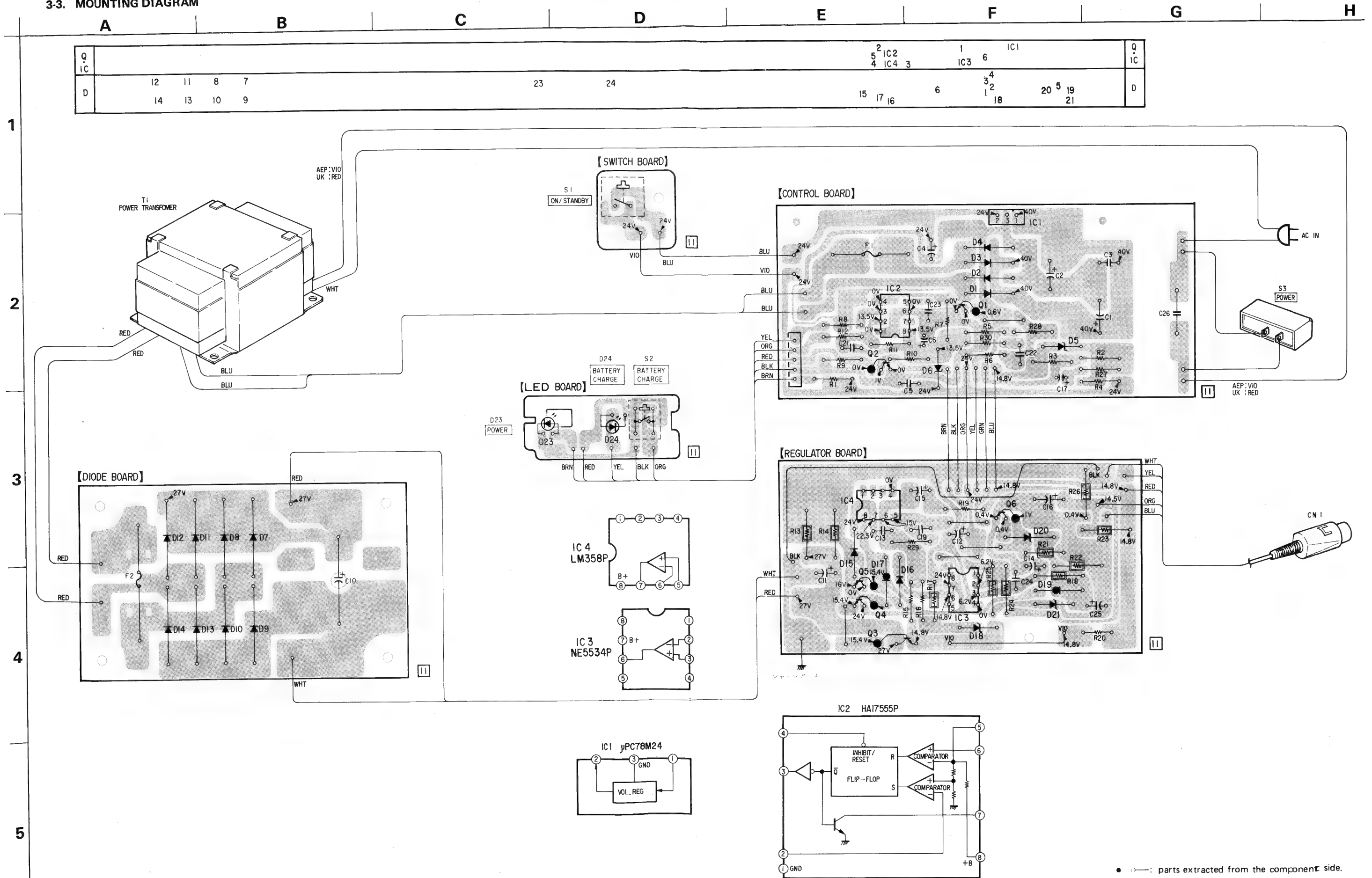
Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Voltage are measured with a VOM (50k $\Omega$ /V)

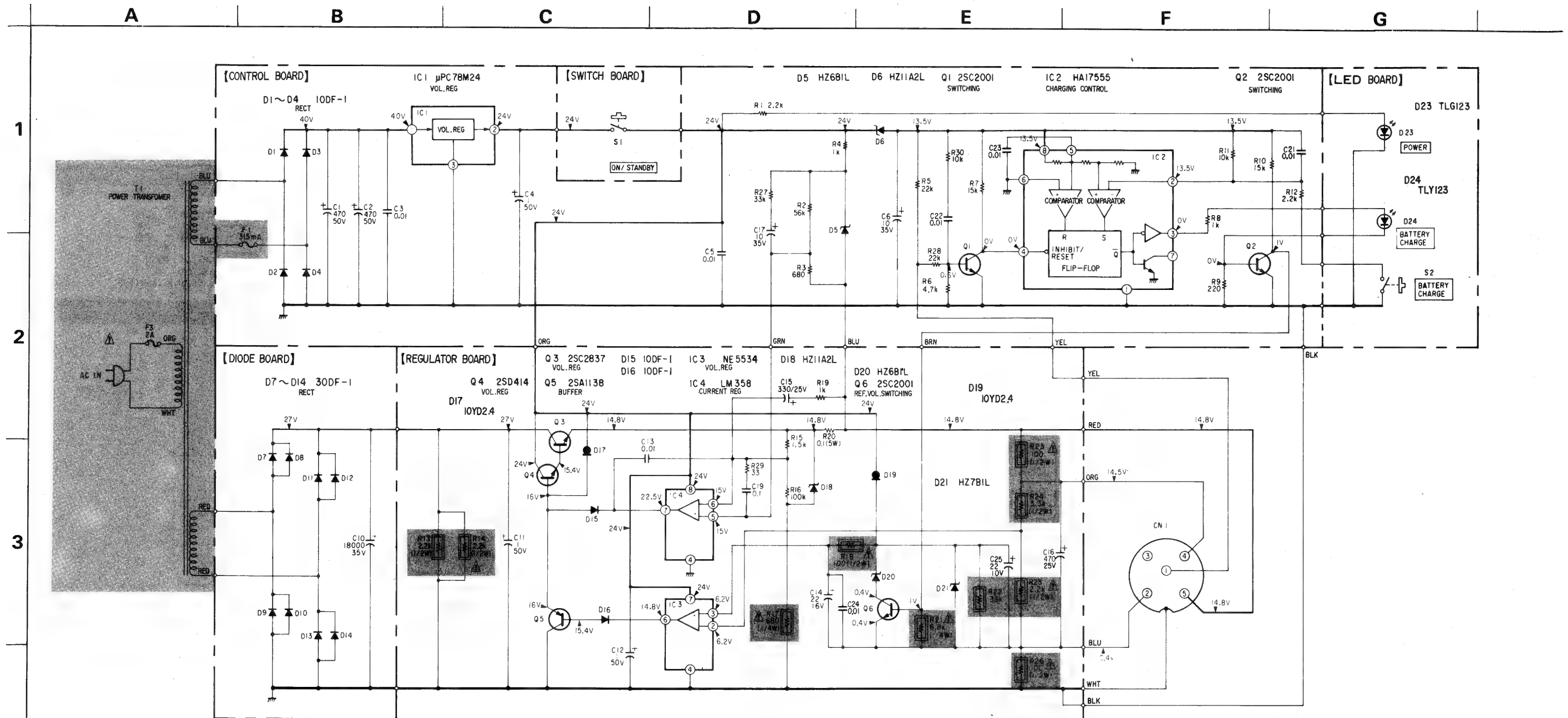
- All resistors are in ohms,  $\frac{1}{4}$  W unless otherwise noted.  
k $\Omega$  : 1000  $\Omega$ , M $\Omega$  : 1000 k $\Omega$
-  : nonflammable resistor.
-  : panel designation.
-  : B+ bus.
- Switch

Ref. No.	Switch	Position
S1	POWER	OFF
S2	BATTERY CHARGE	OFF

## 3-3. MOUNTING DIAGRAM



3-4. SCHEMATIC DIAGRAM



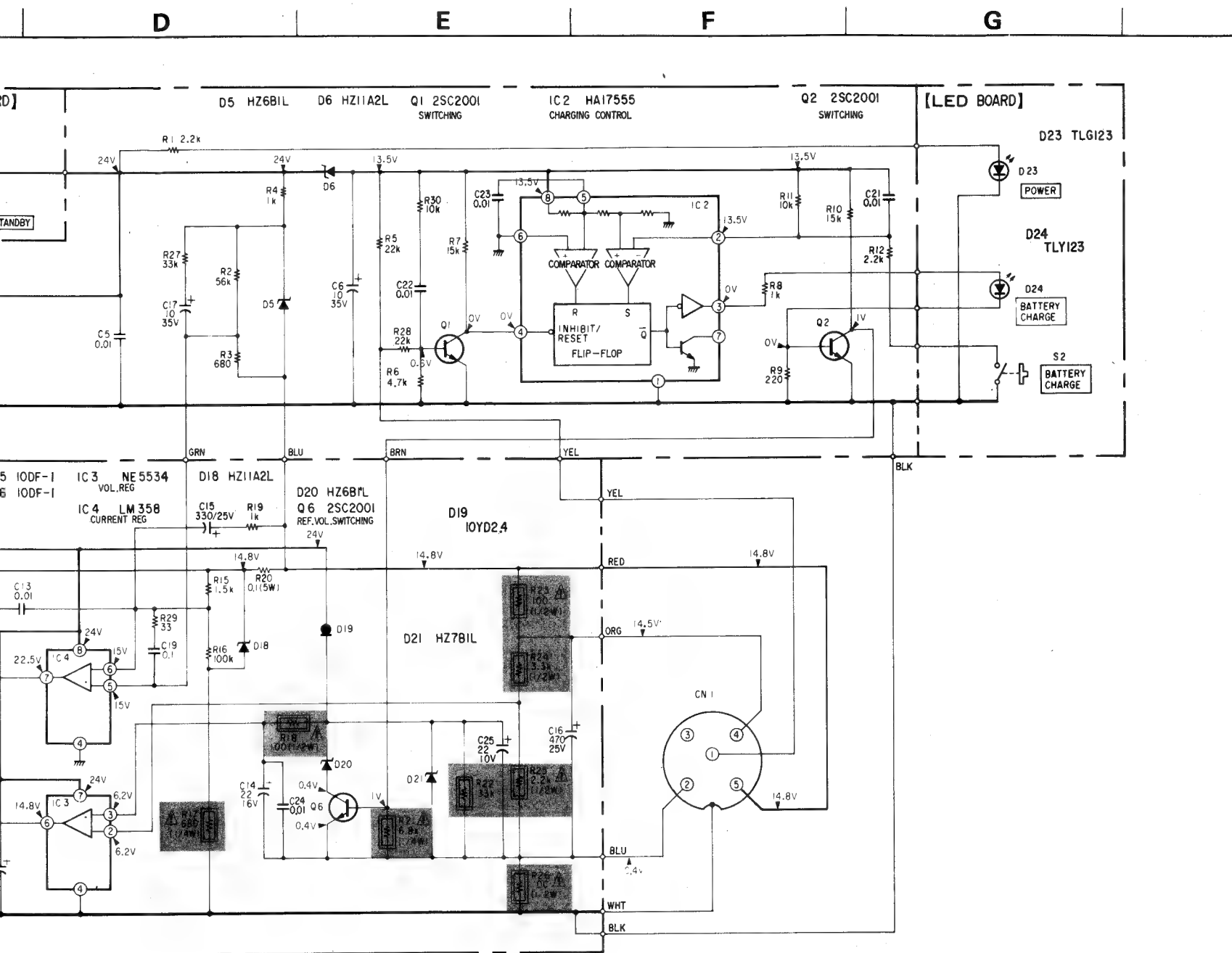
Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.


Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.


Note: Voltage are measured with a VOM (50kΩ/V)

- All resistors are in ohms, 1/4W unless otherwise noted.  
kΩ : 1000 Ω, MΩ : 1000 kΩ
- : nonflammable resistor.
- : panel designation.
- : B+ bus.
- Switch




Ref. No.	Switch	Position
S1	POWER	OFF
S2	BATTERY CHARGE	OFF



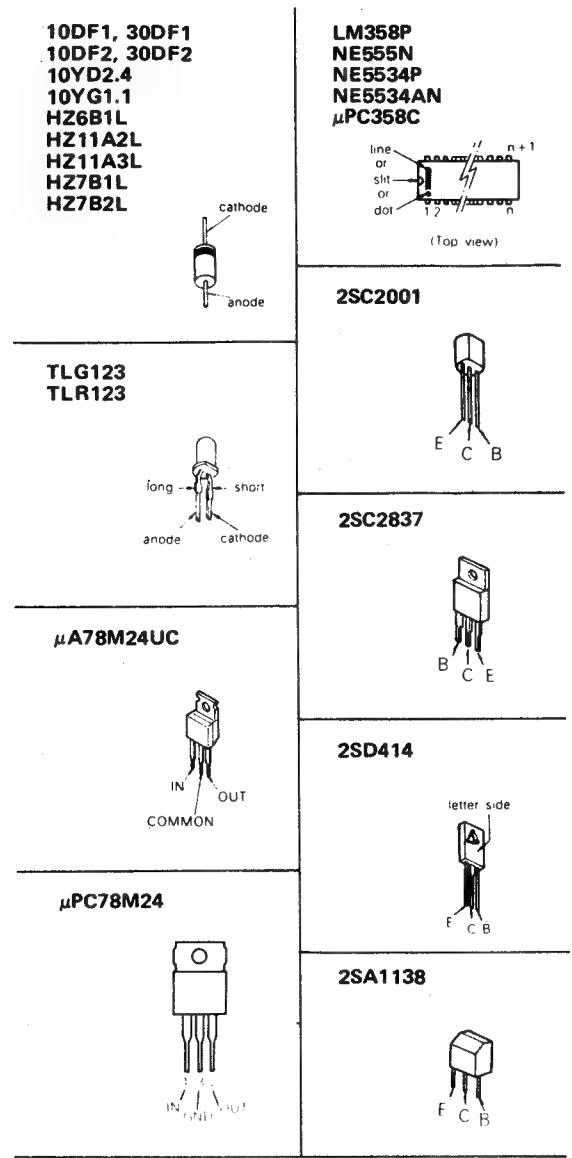
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Voltage are measured with a VOM (50k $\Omega$ /V)

- All resistors are in ohms,  $\frac{1}{4}$  W unless otherwise noted.  
k $\Omega$  : 1000  $\Omega$ , M $\Omega$  : 1000 k $\Omega$
  -  : nonflammable resistor.
  -  : panel designation.
  -  : B+ bus.
  - Switch
- | Ref. No. | Switch         | Position |
|----------|----------------|----------|
| S1       | POWER          | OFF      |
| S2       | BATTERY CHARGE | OFF      |

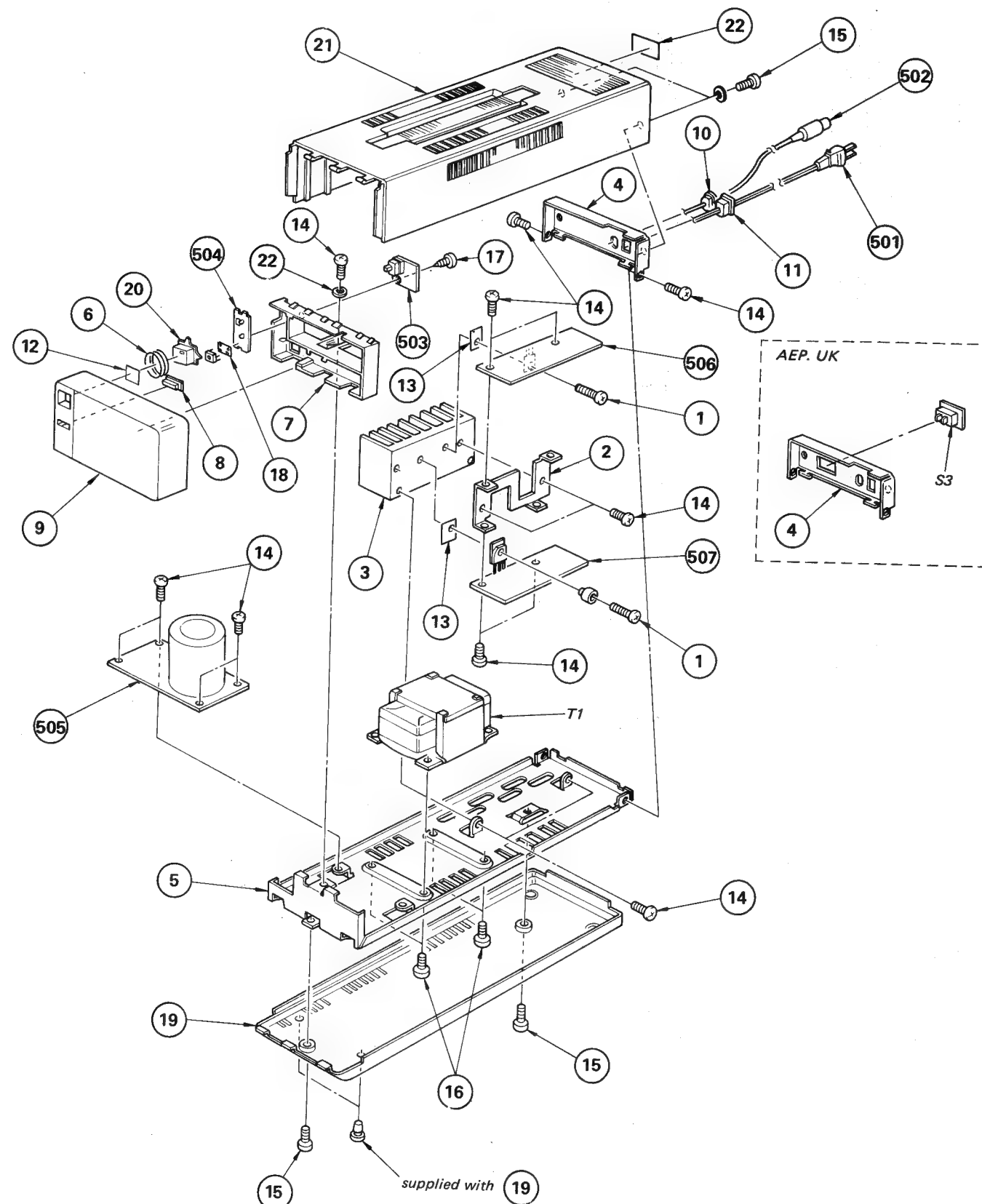
• Semiconductor Lead Layouts



# SECTION 4

## EXPLODED VIEW AND PARTS LIST

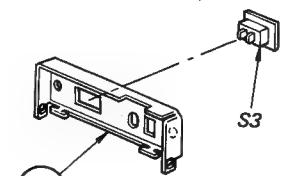
A B C D



## GENERAL SECTION

No.	Part No.	Description
1	2-259-121-00	SCREW M3X10
2	2-362-366-00	BRACKET, PC BOARD
3	2-362-367-00	HEAT SINK
4	2-362-388-00	(US, CND).....PANEL, REAR
5	2-362-369-00	CHASSIS
6	2-291-509-00	SPRING
7	2-291-527-00	PANEL, SUB
8	2-291-502-00	BUTTON (B)
9	2-362-357-00	(US, CND).....PANEL, FRONT
9	2-362-357-11	(AEP, UK).....PANEL, FRONT
10	3-005-073-00	BUSHING, CORD
11	3-703-244-00	BUSHING, CORD
12	3-831-441-11	CUSHION
13	4-857-833-00	SHEET
14	7-682-547-09	SCREW +B 3X6
15	7-682-548-09	SCREW +B M3X8
16	7-682-560-04	SCREW M4X6
17	7-685-145-21	SCREW +PTP M3X6
18	9-911-863-XX	SPACER
19	A-6703-160-A	PANEL ASSY, LOWER
20	X-2291-502-0	BUTTON (A)
21	X-2291-504-0	PANEL ASSY, UPPER
22	7-688-003-02	WASHER
23	4-026-252-00	BUSHING, INSULATING

AEP, UK



## ELECTRICAL PARTS

Ref.No.	Part No.	Description	Ref.No.	Part
501	1-555-795-00	(AEP).....CORD, POWER	D13	8-719
501	1-555-036-00	(UK).....CORD, POWER	D14	8-719
501	1-555-701-00	(US, Canadian)....CORD, POWER	D15	8-719
502	1-556-379-00	CORD, OUTPUT, DC	D16	8-719
503	1-608-159-00	PC BOARD, SWITCH	D17	8-719
504	1-608-160-00	PC BOARD, LED	D17	8-719
505	1-608-161-00	PC BOARD, DIODE	D18	8-719
506	1-608-162-00	PC BOARD, CONTROL	D19	8-719
507	1-608-163-00	PC BOARD, REGULATOR	D19	8-719
C1	1-123-363-00	ELECT 470MF 50V	D20	8-719
C2	1-123-363-00	ELECT 470MF 50V	D21	8-719
C3	1-130-297-00	FILM 0.01MF 100V	D23	8-719
C4	1-131-450-00	TANTAL 1MF 50V	D24	8-719
C5	1-130-297-00	FILM 0.01MF 100V	D24	8-719
C6	1-123-356-00	ELECT 10MF 50V	D24	8-719
C7	1-108-579-00	FILM 0.01MF	F1	1-53
C8	1-108-579-00	FILM 0.01MF	F2	1-53
C10	1-125-312-00	ELECT 18000MF 35V	F3	1-53
C11	1-131-450-00	TANTAL 1MF 50V	IC1	8-75
C12	1-131-450-00	TANTAL 1MF 50V	IC2	8-75
C13	1-130-297-00	FILM 0.01MF 100V	IC3	8-75
C14	1-123-520-00	TANTAL 22MF 16V	IC4	8-75
C15	1-123-335-00	ELECT 330MF 25V	Q1	8-72
C16	1-123-696-00	ELECT 470MF 25V	Q2	8-72
C17	1-123-356-00	ELECT 10MF 35V	Q3	8-72
C19	1-161-773-00	CERAMIC 0.01MF 25V	Q4	8-72
C21	1-108-579-00	FILM 0.01MF	Q5	8-72
C22	1-108-579-00	FILM 0.01MF	Q6	8-72
C23	1-108-579-00	FILM 0.01MF	R1	1-24
C24	1-130-297-00	FILM 0.01MF 100V	R2	1-24
C25	1-131-520-00	TANTAL 22MF 16V	R3	1-24
C26	1-161-744-00	(AEP, UK)....CERAMIC 0.01MF 400V	R4	1-24
CN1	1-508-743-00	CONNECTOR 5P	R5	1-24
D1	8-719-210-12	DIODE 10DF2	R6	1-24
D2	8-719-210-12	DIODE 10DF2	R7	1-24
D3	8-719-210-12	DIODE 10DF2	R8	1-24
D4	8-719-210-12	DIODE 10DF2	R9	1-24
D5	8-719-910-64	DIODE HZ6B1L	R10	1-24
D6	8-719-910-13	DIODE HZ11A3L	R11	1-24
D7	8-719-230-02	DIODE 30DF2	R12	1-24
D8	8-719-230-02	DIODE 30DF2	R13	1-21
D9	8-719-230-02	DIODE 30DF2	R14	1-21
D10	8-719-230-02	DIODE 30DF2	R15	1-21
D11	8-719-230-02	DIODE 30DF2	R16	1-21
D12	8-719-230-02	DIODE 30DF2	R17	1-21
			R18	1-21

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:pμF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

## COILS

- MMH : mH, UH : μH

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7	2-291-527-00	PANEL, SUB
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11	3-703-244-00	BUSHING, CORD
12	3-831-441-11	CUSHION
13	4-857-833-00	SHEET
14	7-682-547-09	SCREW +B 3X6
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501	1-555-701-00	(US,Canadian)....CORD, POWER
502	1-556-379-00	CORD, OUTPUT, DC
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504	1-608-160-00	PC BOARD, LED
505	1-608-161-00	PC BOARD, DIODE
506	1-608-162-00	PC BOARD, CONTROL
507	1-608-163-00	PC BOARD, REGULATOR
C1	1-123-363-00	ELECT 470MF 50V
C2	1-123-363-00	ELECT 470MF 50V
C3	1-130-297-00	FILM 0.01MF 100V
C4	1-131-450-00	TANTAL 1MF 50V
C5	1-130-297-00	FILM 0.01MF 100V
C6	1-123-356-00	ELECT 10MF 50V
C7	1-108-579-00	FILM 0.01MF
C8	1-108-579-00	FILM 0.01MF
C10	1-125-312-00	ELECT 18000MF 35V
C11	1-131-450-00	TANTAL 1MF 50V
C12	1-131-450-00	TANTAL 1MF 50V
C13	1-130-297-00	FILM 0.01MF 100V
C14	1-123-520-00	TANTAL 22MF 16V
C15	1-123-335-00	ELECT 330MF 25V
C16	1-123-696-00	ELECT 470MF 25V
C17	1-123-356-00	ELECT 10MF 35V
C19	1-161-773-00	CERAMIC 0.01MF 25V
C21	1-108-579-00	FILM 0.01MF
C22	1-108-579-00	FILM 0.01MF
C23	1-108-579-00	FILM 0.01MF
C24	1-130-297-00	FILM 0.01MF 100V
C25	1-131-520-00	TANTAL 22MF 16V
C26	1-161-744-00	(AEP,UK)....CERAMIC 0.01MF 400V
CN1	1-508-743-00	CONNECTOR 5P
D1	8-719-210-12	DIODE 10DF2
D2	8-719-210-12	DIODE 10DF2
D3	8-719-210-12	DIODE 10DF2
D4	8-719-210-12	DIODE 10DF2
D5	8-719-910-64	DIODE HZ6B1L
D6	8-719-910-13	DIODE HZ11A3L
D7	8-719-230-02	DIODE 30DF2
D8	8-719-230-02	DIODE 30DF2
D9	8-719-230-02	DIODE 30DF2
D10	8-719-230-02	DIODE 30DF2
D11	8-719-230-02	DIODE 30DF2
D12	8-719-230-02	DIODE 30DF2

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
D13	8-719-230-02	DIODE 30DF2
D14	8-719-230-02	DIODE 30DF2
D15	8-719-210-12	DIODE 10DF2
D16	8-719-210-12	DIODE 10DF2
D17	8-719-200-24	(AEP,UK).....DIODE 10YD2.4
D17	8-719-261-11	(US,Canadian)....DIODE 10YG1.1
D18	8-719-910-13	DIODE HZ11A3L
D19	8-719-200-24	(AEP,UK).....DIODE 10YD2.4
D19	8-719-261-11	(US,Canadian)....DIODE 10YG1.1
D20	8-719-910-64	DIODE HZ6B1L
D21	8-719-910-75	DIODE HZ7B2L
D23	8-719-812-33	DIODE TLG123
D24	8-719-812-32	(AEP,UK).....DIODE TLY123
D24	8-719-812-31	(US,Canadian)....DIODE TLR123
F1	1-532-447-XX	FUSE 0.315A
F2	1-532-630-00	FUSE 5A
F3	1-532-268-00	(US,Canadian)....FUSE 2A
IC1	8-759-978-24	IC UA78M24UC
IC2	8-759-905-55	IC NE555N
IC3	8-759-905-34	IC NE5534AN
IC4	8-759-135-80	IC UPC358C
Q1	8-729-100-13	TRANSISTOR 2SC2001
Q2	8-729-100-13	TRANSISTOR 2SC2001
Q3	8-729-383-73	TRANSISTOR 2SC2837
Q4	8-729-141-43	TRANSISTOR 2SD414
Q5	8-729-113-82	TRANSISTOR 2SA1138
Q6	8-729-100-13	TRANSISTOR 2SC2001
R1	1-246-481-00	CARBON 2.2K 1/4W
R2	1-246-515-00	CARBON 56K 1/4W
R3	1-246-469-00	CARBON 680 1/4W
R4	1-246-473-00	CARBON 1K 1/4W
R5	1-246-505-00	CARBON 22K 1/4W
R6	1-246-489-00	CARBON 4.7K 1/4W
R7	1-246-501-00	CARBON 15K 1/4W
R8	1-246-473-00	CARBON 1K 1/4W
R9	1-246-457-00	CARBON 220 1/4W
R10	1-246-501-00	CARBON 15K 1/4W
R11	1-246-497-00	CARBON 10K 1/4W
R12	1-246-481-00	CARBON 2.2K 1/4W
R13	1-214-872-00	METAL 2.2K 1/2W F
R14	1-214-872-00	METAL 2.2K 1/2W F
R15	1-214-733-00	METAL 1.5K 1/4W
R16	1-214-777-00	METAL 100K 1/4W
R17	1-214-749-00	METAL 6.8K 1/4W F
R18	1-214-830-00	METAL 100 1/2W F

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
R19	1-214-729-00	METAL 1K 1/4W
R20	1-214-789-00	METAL 0.1
R21	1-214-749-00	METAL 6.8K 1/4W F
R22	1-214-901-00	METAL 33K 1/2W F
R23	1-214-830-00	METAL 100 1/2W F
R24	1-214-876-00	METAL 3.3K 1/2W F
R25	1-214-872-00	METAL 2.2K 1/2W F
R26	1-214-830-00	METAL 100 1/2W F
R27	1-214-096-00	CARBON 33K 1/4W
R28	1-246-505-00	CARBON 22K 1/4W
R29	1-214-069-00	METAL 33K 1/4W
R30	1-246-497-00	CARBON 10K 1/4W
S1	1-553-926-00	SWITCH, PUSH
S2	1-553-856-00	SWITCH,
S3	1-553-575-00	(AEP,UK)....SWITCH
T1	1-447-441-00	(AEP,UK).....TRANSFORMER, POWER
T1	1-447-440-00	(US,Canadian)....TRANSFORMER, POWER

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

## COILS

- MMH : mH, UH : μH

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

## COILS

- MMH : mH, UH : μH

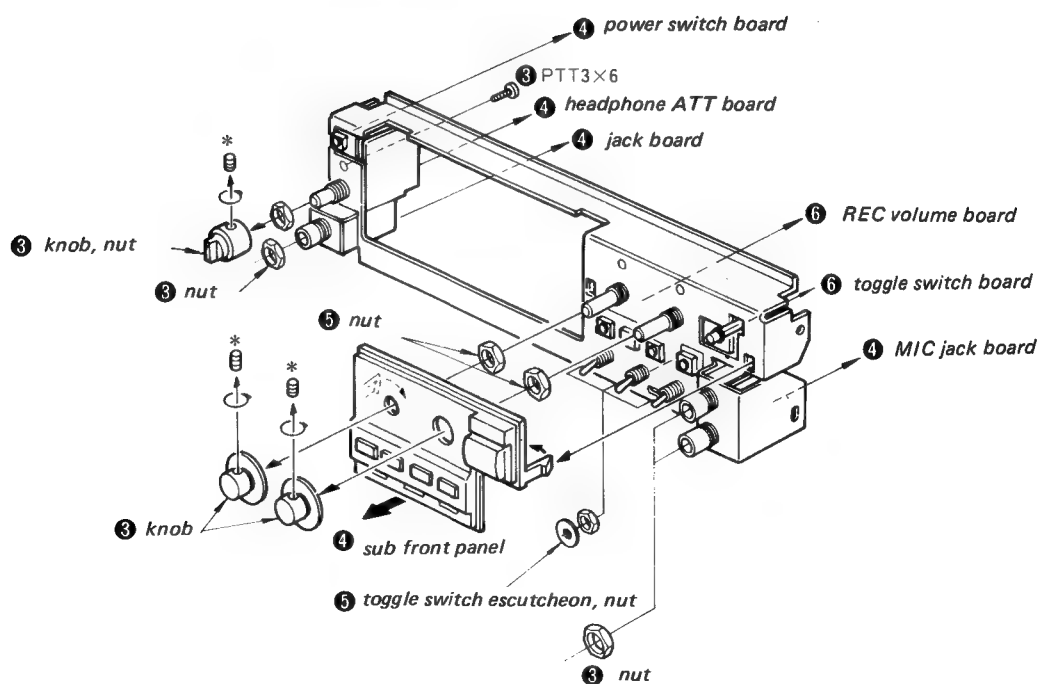
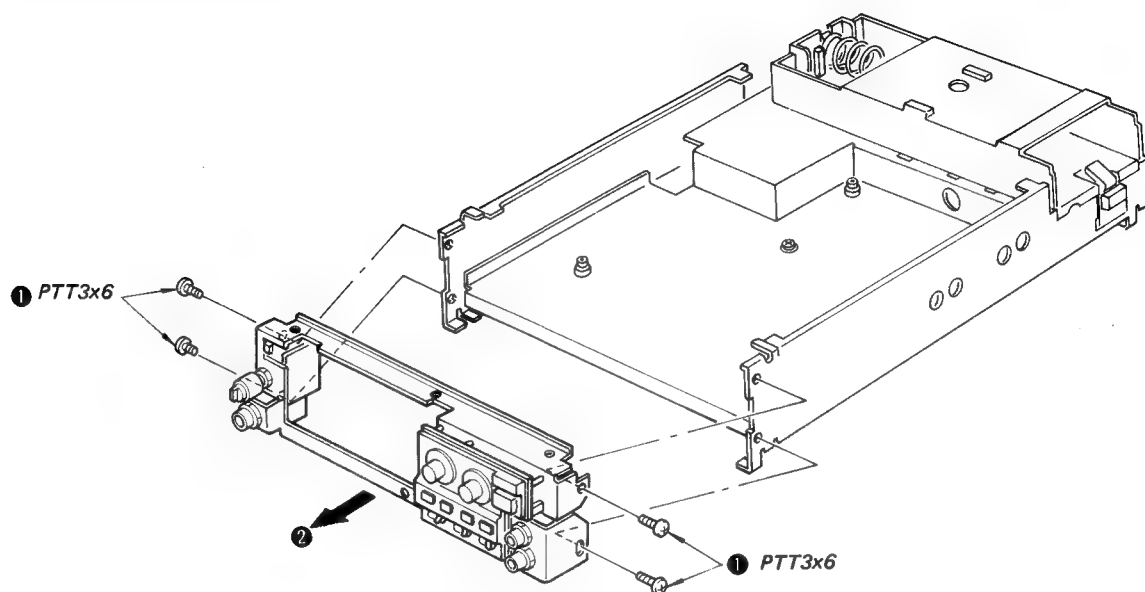
The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Sony Corporation  
Audio & Video Group © 1982

English  
82102154-1  
Printed in Japan

**POWER SWITCH BOARD, HEADPHONE ATT BOARD, JACK BOARD  
REC VOLUME BOARD, MIC JACK BOARD, TOGGLE SWITCH BOARD**



\* Use L-shaped wrench 1.27 mm.



## SECTION 3 ELECTRICAL ADJUSTMENTS

- Switch position (Except other notice)
  - MUTING ..... OFF
  - COPY ..... OFF
  - INPUT ..... LINE
  - RES ..... 16BIT
  - HEADPHONES ATT ..... 0 dB
- E-E mode : VIDEO-IN and VIDEO-OUT terminals are connected.



Power supply : Use AC POWER ADAPTOR-AC-700  
Reference input level

Input terminal	MIC	LINE IN	VIDEO IN
Source impedance	300Ω	10kΩ	75Ω
Signal input level	0.77mV(-60dB)	0.25V(-10dB)	1 V

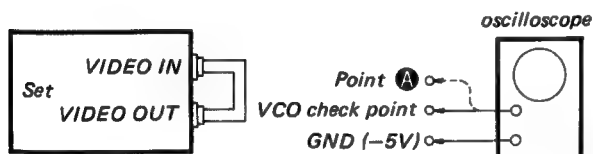
Reference output level

Output terminal	HEADPHONES	LINE OUT	VIDEO OUT
Load impedance	8 Ω	47kΩ	75Ω
Signal output level	49mV(-24dB)	0.25V(-10dB)	1 V

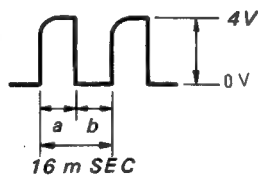
Make an adjustment after turning POWER ON more than half an hour so that the drift by temperature rise is avoided.

### VCO ADJUSTMENT

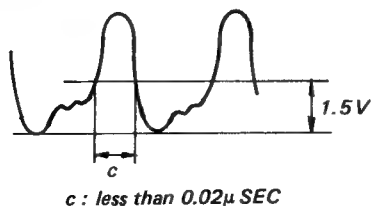
Procedure:



1. Connect VIDEO IN and VIDEO terminals (E-E mode).
2. Connect the oscilloscope to the VCO check point and GND point.
3. Adjust L505 so that duty ratio is 50%.



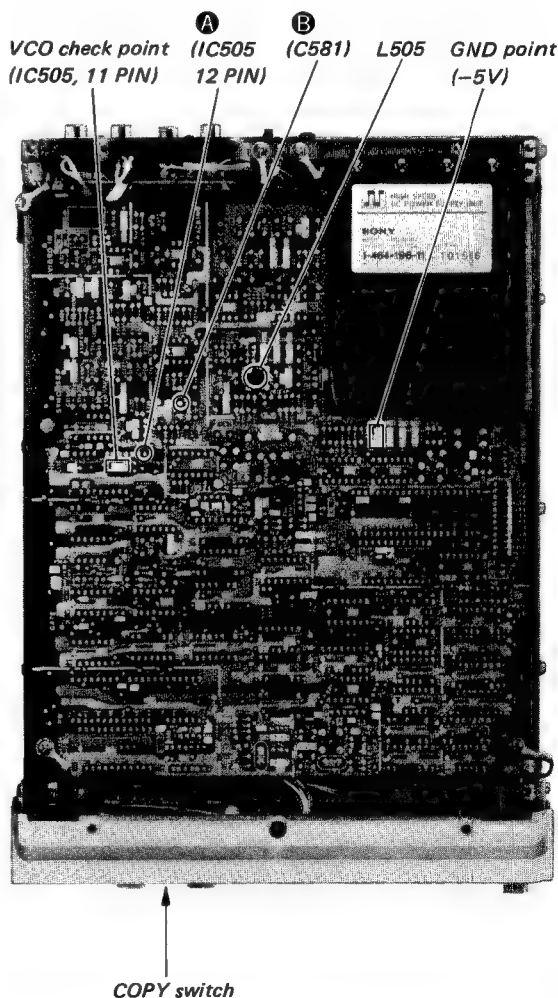
4. Turn the COPY switch to OFF→ON→OFF and then confirm the duty ratio is 50%.
5. Connect the oscilloscope to the point A and GND point.
6. Confirm the duty ratio is as shown below.



7. If  $c$  is  $0.02\mu\text{Sec}$  or more, solder the point B (C581 is connected).

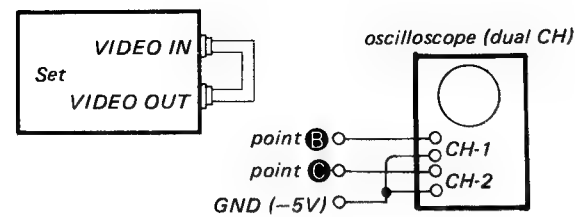
### Adjustment Location:

— DIGITAL board —

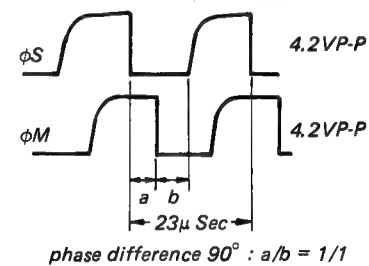


# PAL CLOCK ADJUSTMENT (Only PAL/SECAM system)

Procedure :

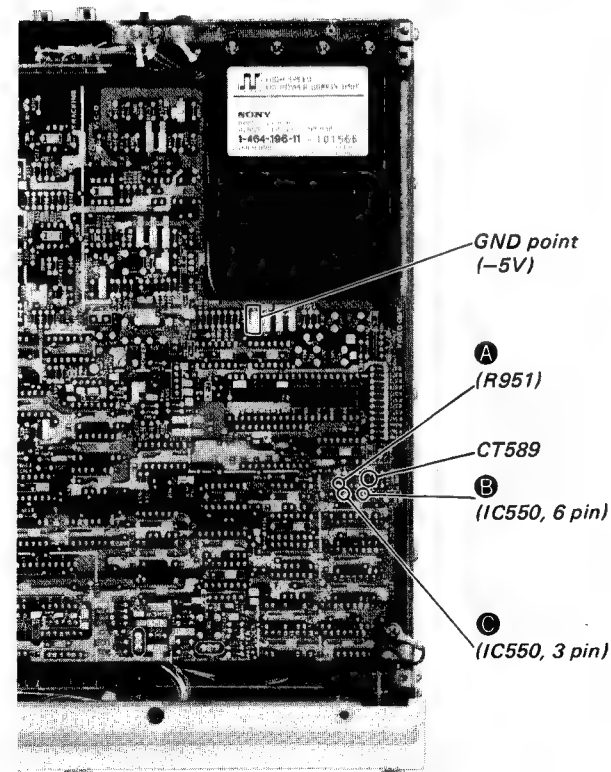


1. Connect VIDEO IN and VIDEO OUT terminals (E-E mode).
2. Solder the point A (R951 is connected).
3. Connect the oscilloscope to the point B (IC550, 6 pin) and point C (IC550, 3 pin).
4. Adjust CT589 so that the phase difference is  $90^\circ$ .



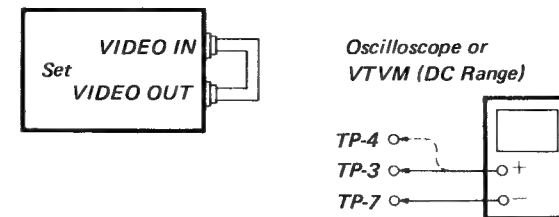
5. Unsolder the point A (R951)

Adjustment Location :  
- DIGITAL board -



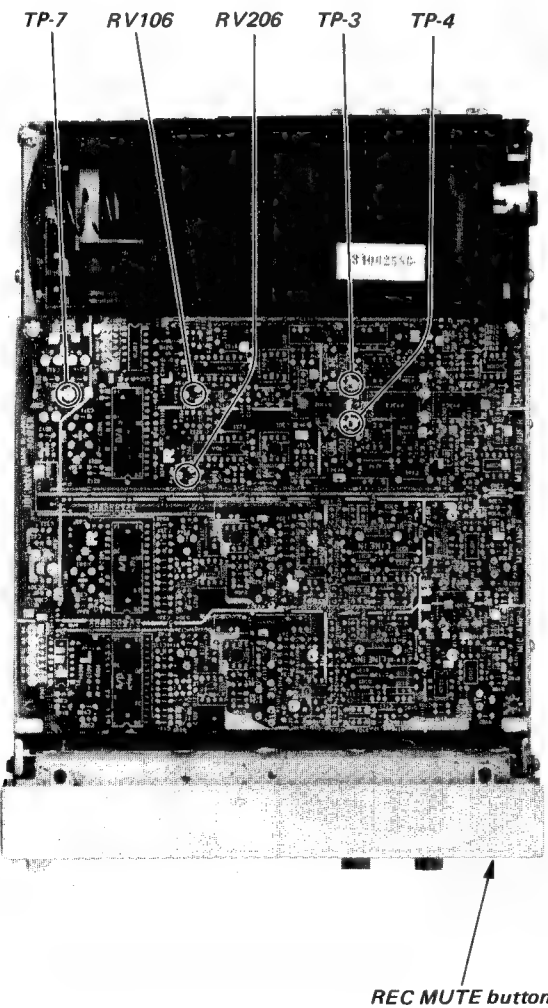
# D/A OFFSET ADJUSTMENT

Procedure :



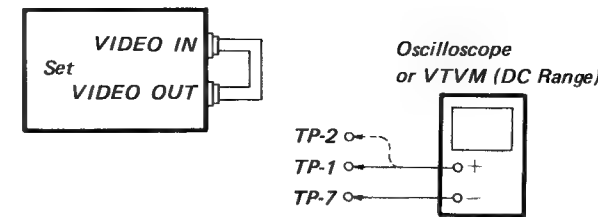
1. Connect VIDEO-IN and VIDEO-OUT terminals (E-E MODE).
2. Connect the oscilloscope or VTVM (DC Range) to the test point TP-3 (L-CH)/TP-4 (R-CH) and TP-7 (ground point).
3. Adjust RV106 (L-CH)/RV206 (R-CH) with pressing the REC MUTE button for  $0 \pm 10$  mV (DC) reading on oscilloscope or VTVM.

Adjustment Location :  
- ANALOG board -



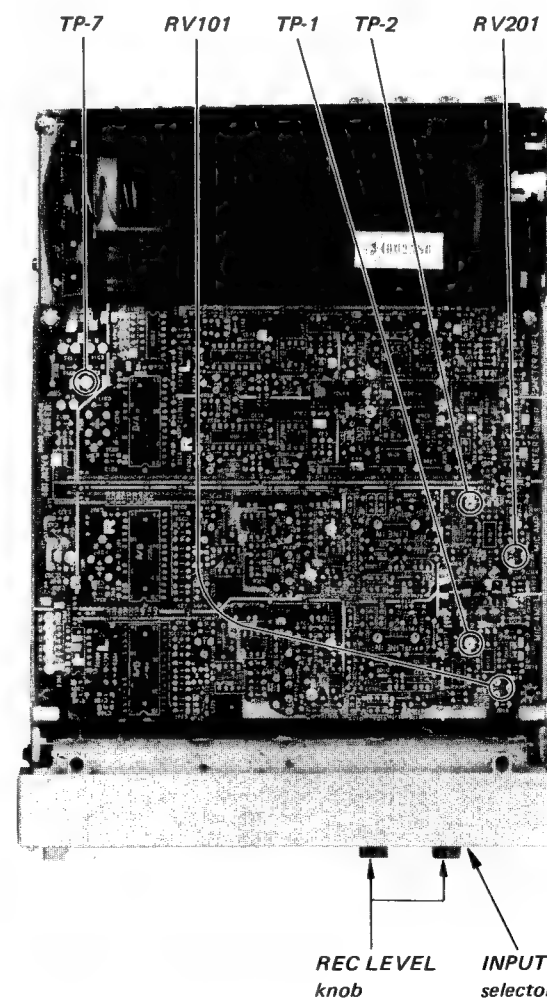
# MIC AMP OFFSET ADJUSTMENT

Procedure :



1. Connect the oscilloscope or VTVM (DC Range) to the test point TP-1 (L-CH)/TP-2 (R-CH) and TP-7 (ground point).
2. Turn the INPUT selector to MIC and the REC LEVEL knobs to the minimum (0).
3. Adjust RV101 (L-CH) / RV206 (R-CH) for  $0 \pm 50$  mV (DC) reading on oscilloscope or VTVM.

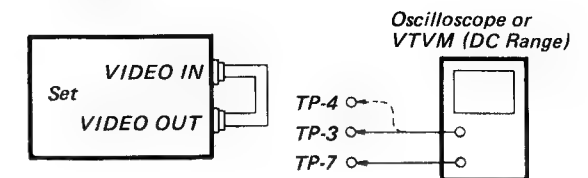
Adjustment Location :  
- ANALOG board -



# A/D OFFSET ADJUSTMENT

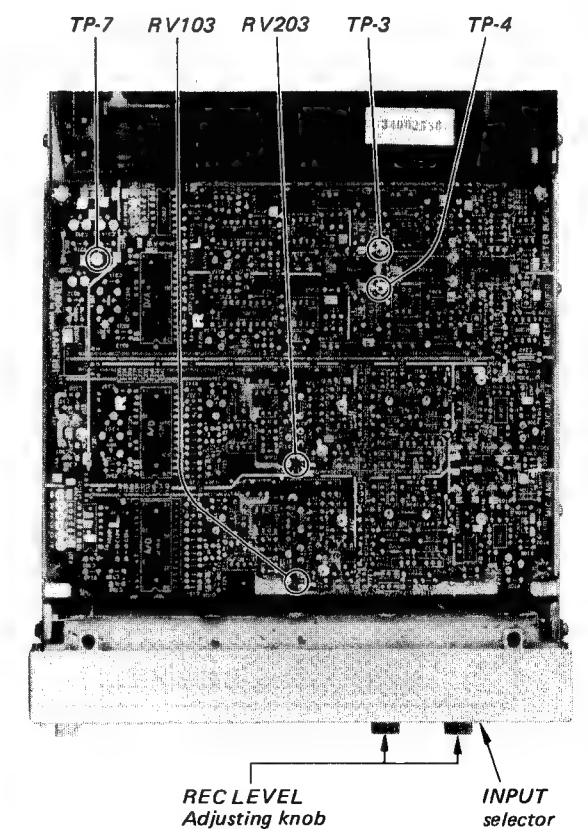
A/D OFFSET ADJUSTMENT should be made later than that of D/A OFFSET

Procedure :



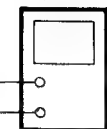
1. Connect VIDEO-IN and VIDEO-OUT TERMINALS (E-E MODE).
2. Connect the oscilloscope or VTVM (DC Range) to the test point TP-3 (L-CH), TP-4 (R-CH), and TP-7 (ground point).
3. Turn the INPUT selector to the LINE and the REC LEVEL knobs to the minimum (0).
4. Adjust RV103 (L-CH)/RV203 (R-CH) for  $0 \pm 10$  mV (DC) reading on oscilloscope or VTVM.

Adjustment Location :  
- ANALOG board -



be made

illoscope or  
VM (DC Range)

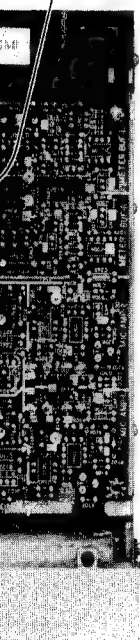


OUT TERMI-

VM (DC Range)  
P-4 (R-CH), and

LINE and the  
um (0).  
-CH) for 0±  
ope or VTVM.

TP-4

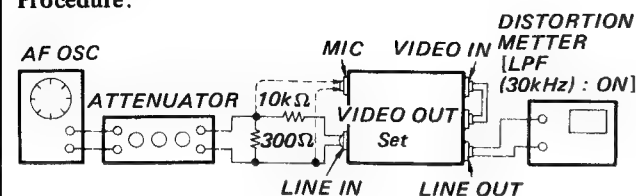


INPUT  
selector

## A/D DISTORTION ADJUSTMENT

The low distortion AF OSC and the low distortion measurement equipment are needed to make this adjustment.

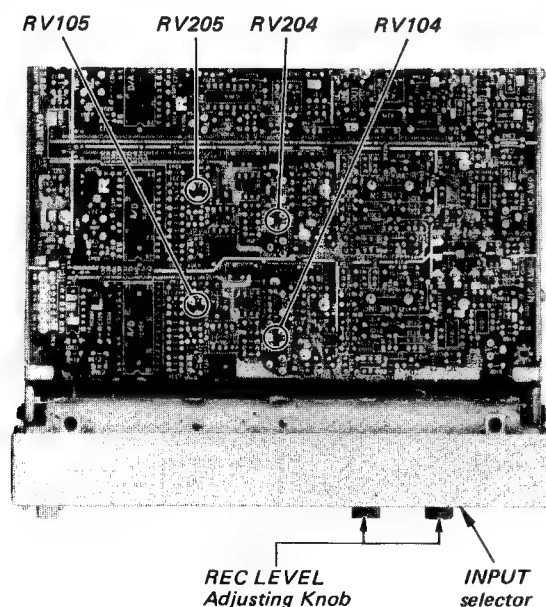
### Procedure:



1. Connect VIDEO-IN and VIDEO-OUT terminals (E-E mode).
  2. Apply a 1 kHz, 0 dB (0.775V) to the LINE IN terminals.
  3. Adjust the REC LEVEL knobs so that OVER of the LED peak program meters just light up.
  4. Decrease the input signal level from 0.5 to 1 dB with the attenuator, and confirm OVER of that goes out.
  5. Adjust RV104, 105(L-CH)/RV204, 205(R-CH) for minimum reading on distortion meter.
  6. And then apply a 1 kHz, -20dB (0.775V) to the MIC terminals.
  7. Confirm the distortion similarly.
- reference data  
distortion LINE IN . . . . . less than -84dB  
MIC . . . . . less than -80dB

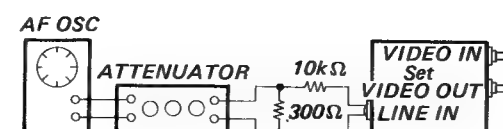
### Adjustment Location:

- ANALOG board -



## PEAK METER ADJUSTMENT

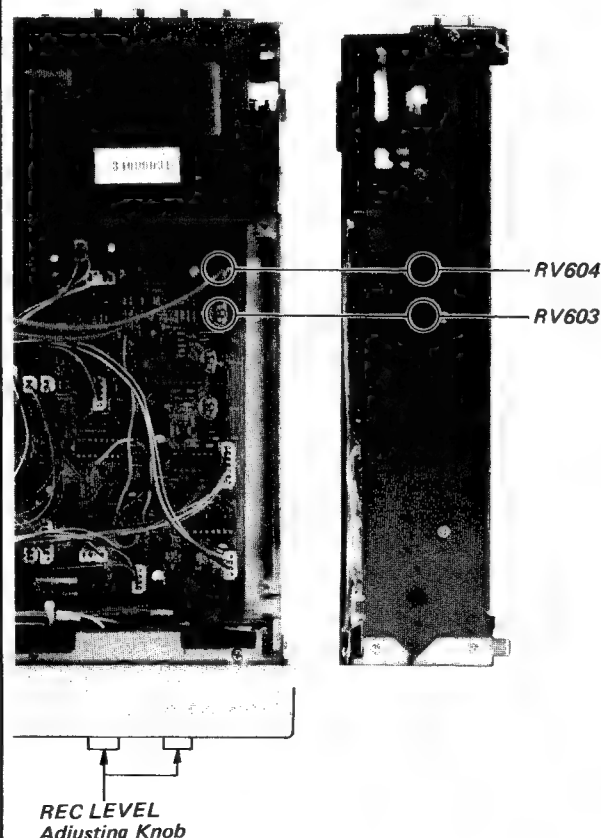
### Procedure:



1. Connect VIDEO IN and VIDEO OUT terminals (E-E mode).
2. Apply a 1kHz, 0dB (0.775V) to the LINE IN terminals.
3. Adjust the REC LEVEL knobs so that OVER of the LED peak program meters just light up.
4. Decrease the input signal level from 0.5 to 1dB with the attenuator, and confirm OVER of that goes out.
5. Adjust RV604(L-CH)/RV603(R-CH) so that the LED peak program meters just illuminate 0dB.

### Adjustment Location:

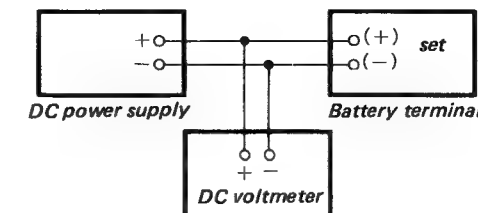
- POWER SUPPLY board -



## BATT LEVEL ADJUSTMENT

Remove the AC power adapter during this adjustment.

### Procedure:



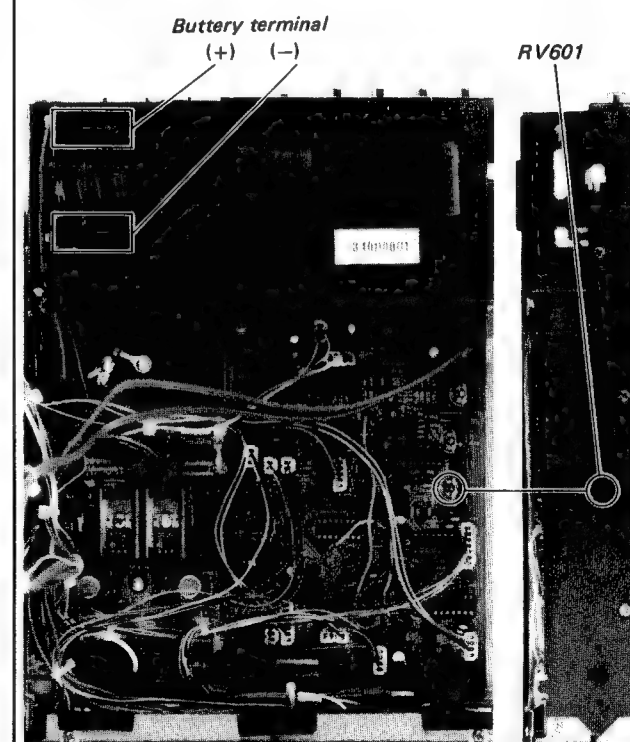
1. Adjust the output voltage of the DC power supply to  $11 \pm 0.1$  V and connect to the battery terminals of the set.
2. Turn the POWER switch to on and press the BATT CHECK button.
3. Confirm the LED peak program meter illuminates only L-CH.
4. Adjust RV601 with pressing the BATT CHECK button so that the LED meter illuminates shown as below.

BATT CHECK E . . . .



### Adjustment Location:

- POWER SUPPLY board -

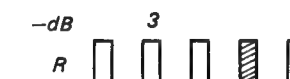


## TRACKING LEVEL ADJUSTMENT

### Procedure:

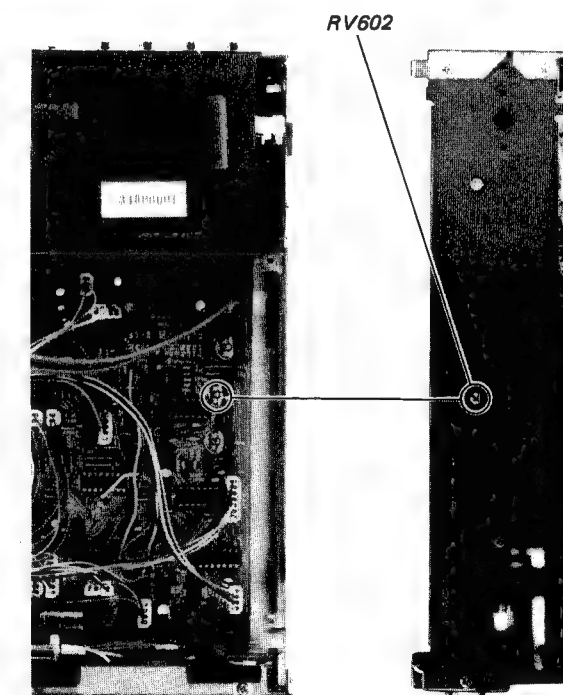


1. Connect VIDEO IN and VIDEO OUT terminal (E-E mode).
2. Press the METER selector button.
3. Confirm the TRACKING indicator illuminates and the LED peak program meter illuminates only R-CH.
4. Adjust RV602 so that the LED meter illuminates shown as below.



### Adjustment Location:

- POWER SUPPLY board -

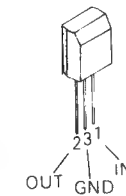


# SECTION 4 DIAGRAMS

## Semiconductor Lead Layouts

NE564N  
74LS169PC  
CX7914  
CX890  
CX899  
μPC319C  
μPC4557C  
μPC4558C  
μPD652C030  
μPD785C  
μPD4584BC  
MSM4050RS  
MSM4053RS  
MSM512812RS  
NE5534AN  
NJM2903D  
NJM4556D  
SN74ALS02N  
SN74ALS04N  
SN74LS27N  
SN74ALS74N  
SN74LS157N  
SN74LS163AN  
SN74LS164N  
SN7406N  
TC40H002P  
TC40H008P  
TC40H032P  
TC40H074P  
TC40H164P  
TC40H367P  
TC40H393P  
TC4001BP  
TC4011BP  
TC40163BP  
TC4024BP  
TC4027BP  
TC4029BP  
TC4050BP  
TC4066BP  
TC4093BP  
TC4528BP  
TM4505P  
TL071CP  
TL072CP

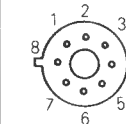
μPC78L15



μA79M05

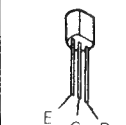


LF353H  
LF356H  
LF357H

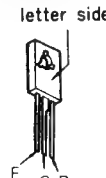


(Bottom view)

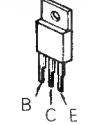
2SA733  
2SC945  
2SC1364



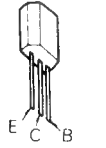
2SA939  
2SC2071



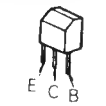
2SA985A  
2SB719  
2SC2275  
2SD759



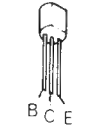
2SA1027R



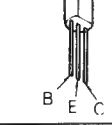
2SA1138  
2SC2676  
2SD774



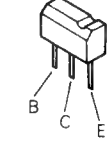
2SC710



2SC1129



2SC2021



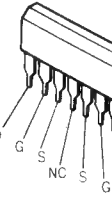
2SK107  
2SK246



2SK152



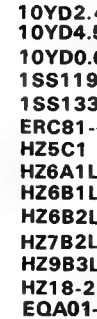
2SK244



2SK245



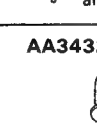
10E2  
10YD1.3B  
10YD2.4A  
10YD4.5B  
10YD0.6  
1SS119  
1SS133  
ERC81-004  
HZ5C1  
HZ6A1L  
HZ6B1L  
HZ6B2L  
HZ7B2L  
HZ9B3L  
HZ18-2L  
EQA01-06R2



cathode

anode

AA3432S



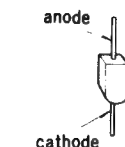
long short

anode cathode

FC54M



SV02



anode

cathode

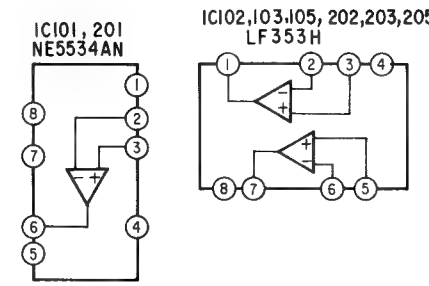
## 4-1. MOUNTING DIAGRAM —Conductor Side—

A

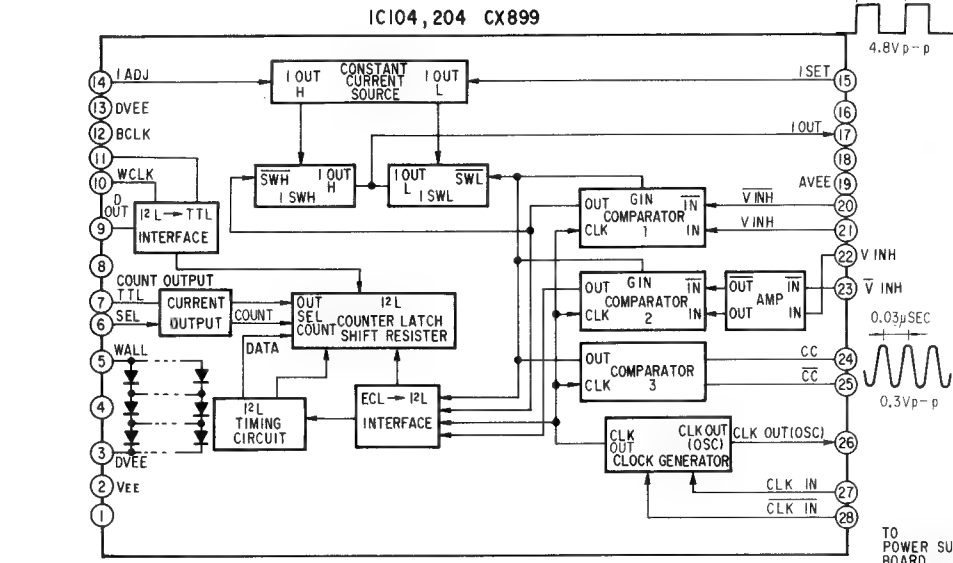
B

C

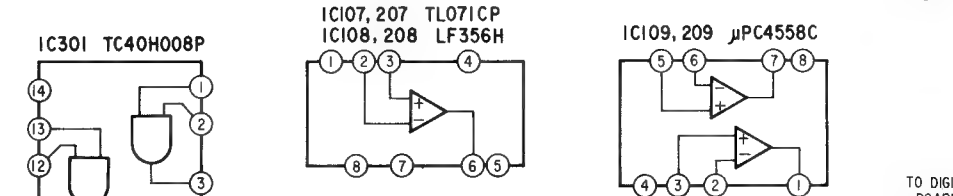
1



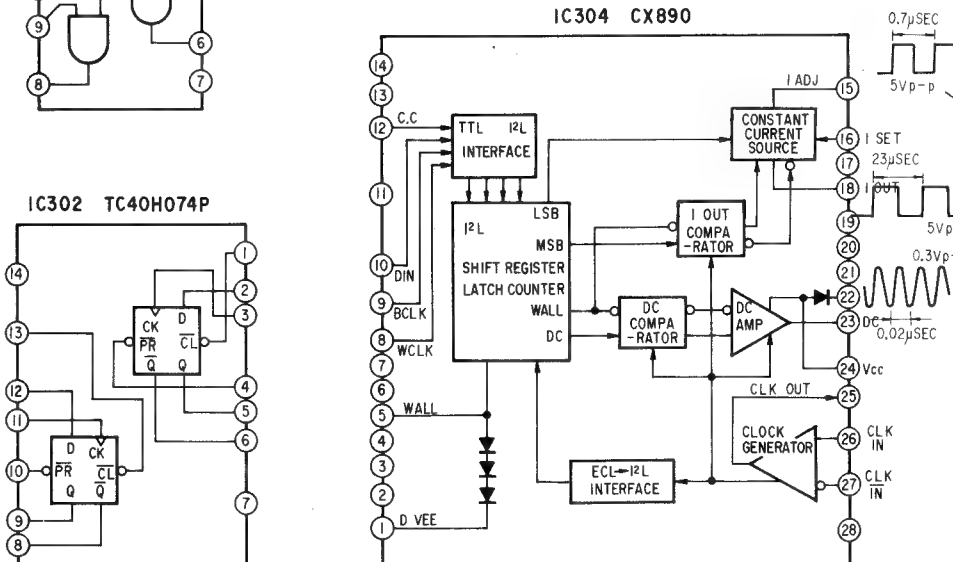
2



3



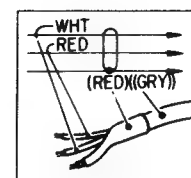
4



5

### Note:

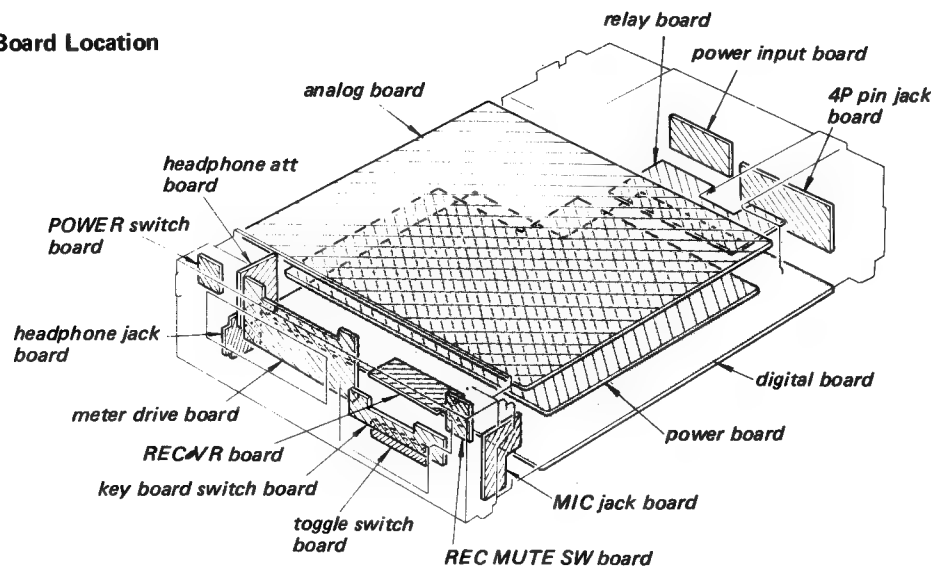
- Color code of sleeving over the end of the jacket.



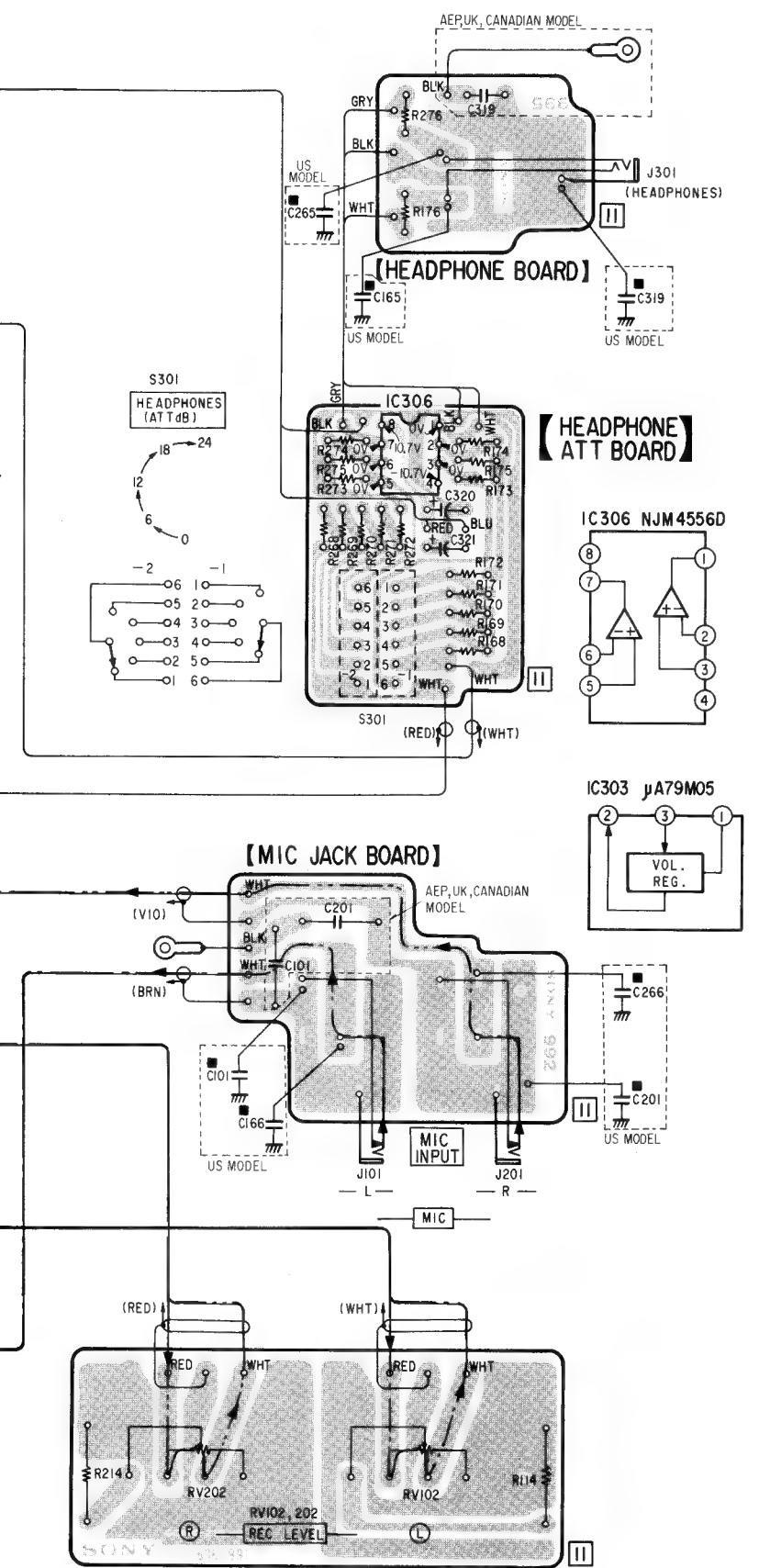
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- : pattern connection on the component side.
- : B + pattern

- : signal path
- : L-CH signal path
- : R-CH signal path

## Circuit Board Location

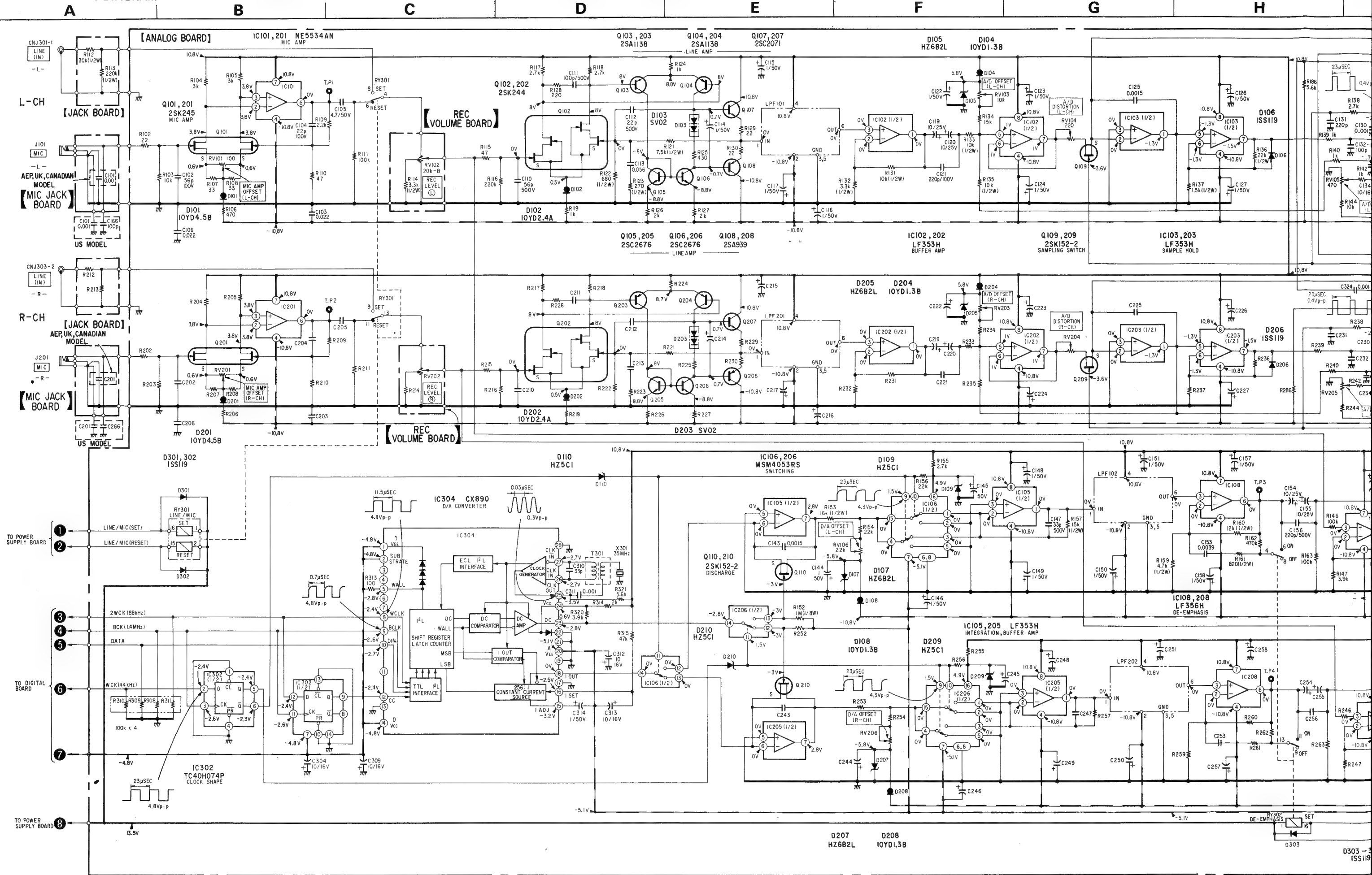


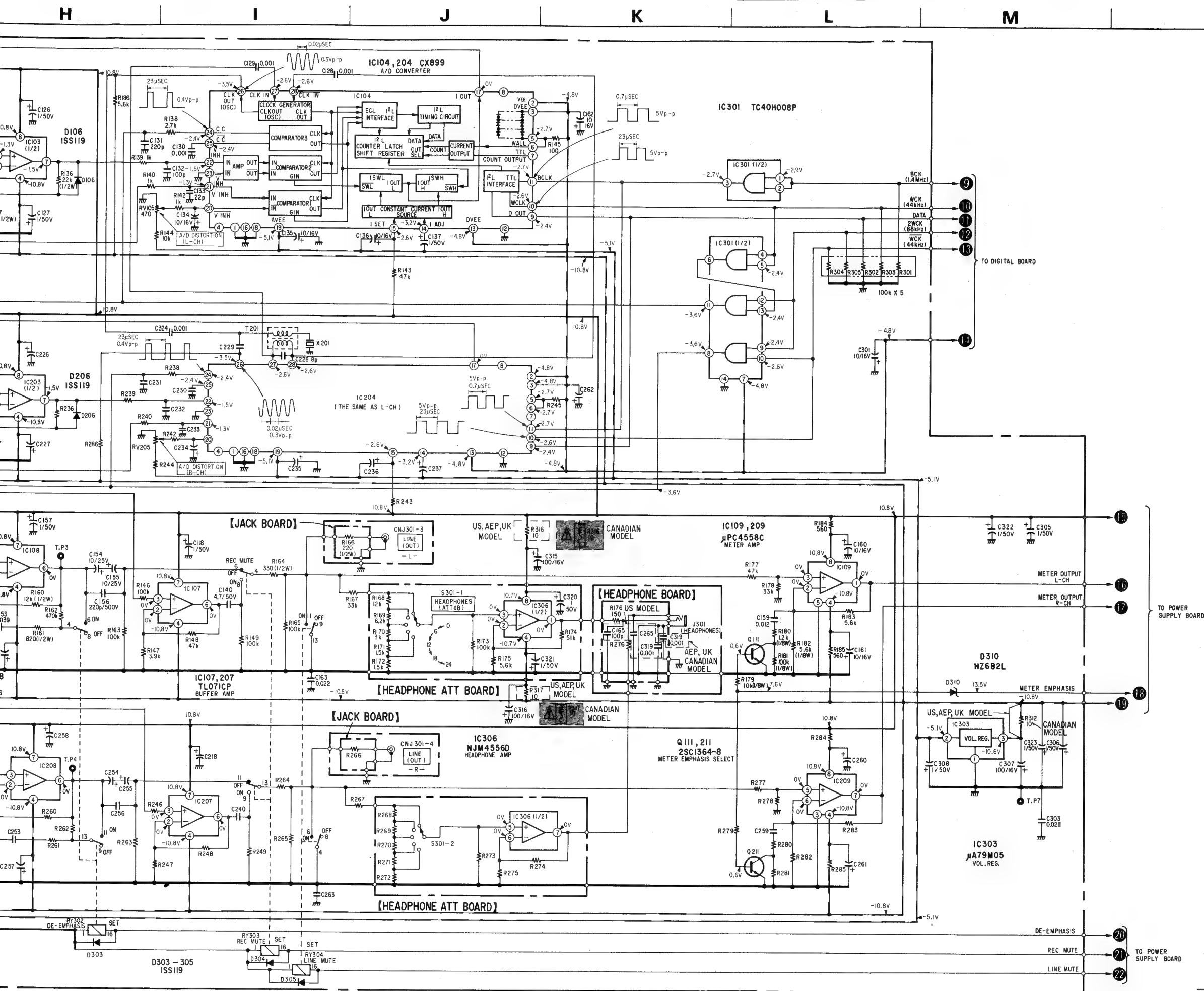




Q	IC302	110	IC105	206, 205	IC108	III	IC109
IC	IC304	210	IC106	208	IC208	211	IC209
	IC303	IC204	IC202	IC205	207	201	
		209	IC203	IC207	204		
	IC301	IC104	IC102	IC107	106, 105	IC101	
D		109	103	107	102	101	
		107	104	303, 205	304	310	305, 201
		108	105	204	203		301
		207	106	209	103		302
		208		104	102		101

#### 4-2. SCHEMATIC DIAGRAM





## Note:

- Switch, relay

Ref. No.	Switch	Position
S301	HEADPHONES ATTdB	0
S601	MUTING	OFF
S602	COPY	OFF
S603	INPUT	MIC
S604	METER	OFF
S605	PEAK HOLD RESET/AUTO	OFF
S606	PEAK HOLD RESET/MANUAL	OFF
S607	BATT CHECK	OFF
S608	REC MUTE	OFF
S609	POWER	OFF
S600	RES	14BIT
RY301	LINE/MIC	MIC
RY302	De-emphasis	OFF
RY303	REC MUTE	OFF
RY304	Line mute	OFF
RY601	AC/DC	AC
RY602	POWER	ON
RY603	Charge	ON

- : panel designation.

- All resistors are in ohms,  $\frac{1}{8}W$  unless otherwise noted.  
k $\Omega$  : 1000  $\Omega$ , M $\Omega$  : 1000 k $\Omega$

- All capacitors are in  $\mu F$  unless otherwise noted. pF :  $\mu\mu F$   
50WV or less are not indicated except for electrolytics and tantalums.

- : fusible resistor.

- : adjustment for repair.

- : B+ bus.

- : B- bus.

- Voltages are dc with respect to ground unless otherwise noted.

- Readings are taken under E-E mode, no-signal conditions with a VOM (50 k $\Omega/V$ ).

- Voltage/waveforms are measured with a wide-band oscilloscope.

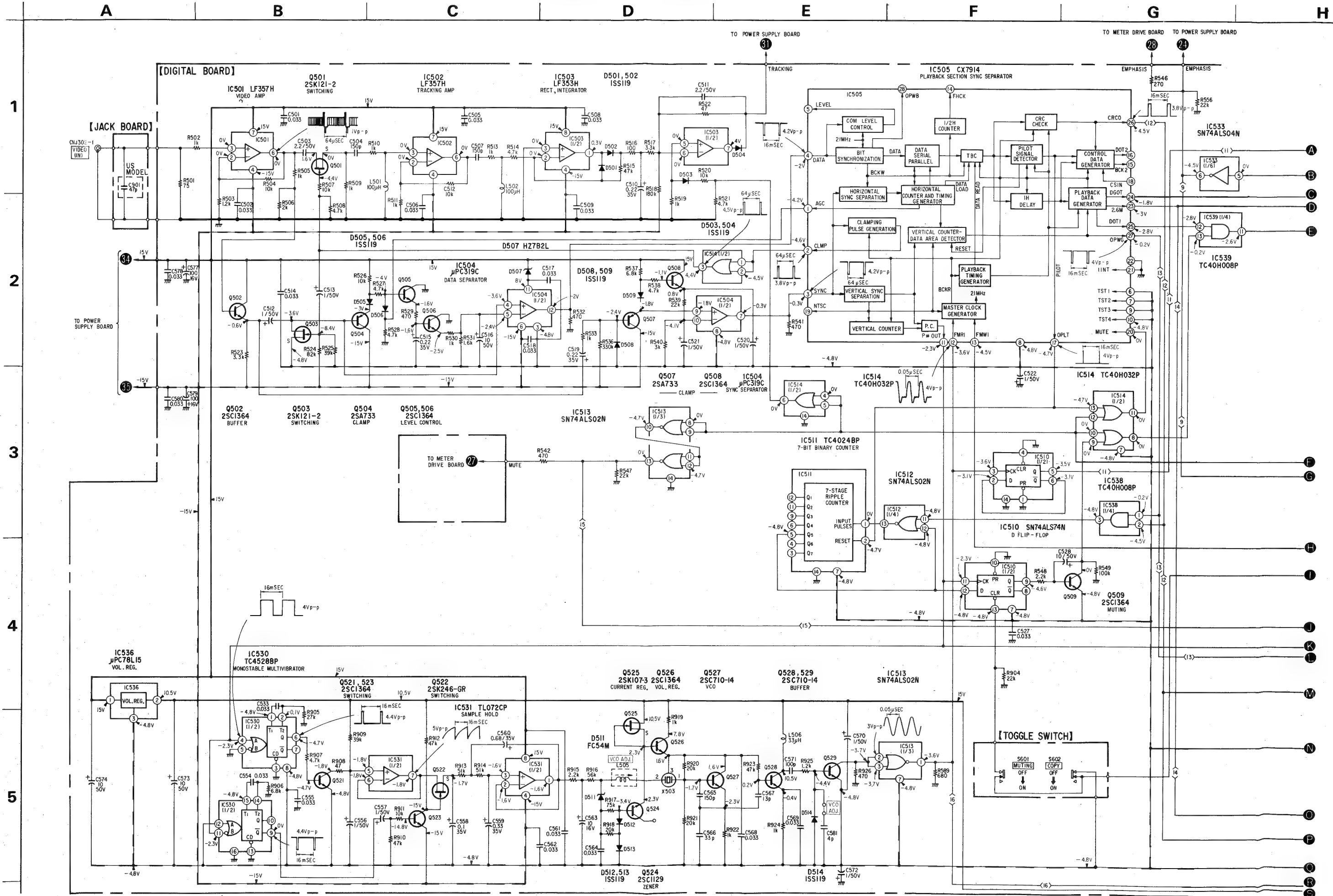
Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

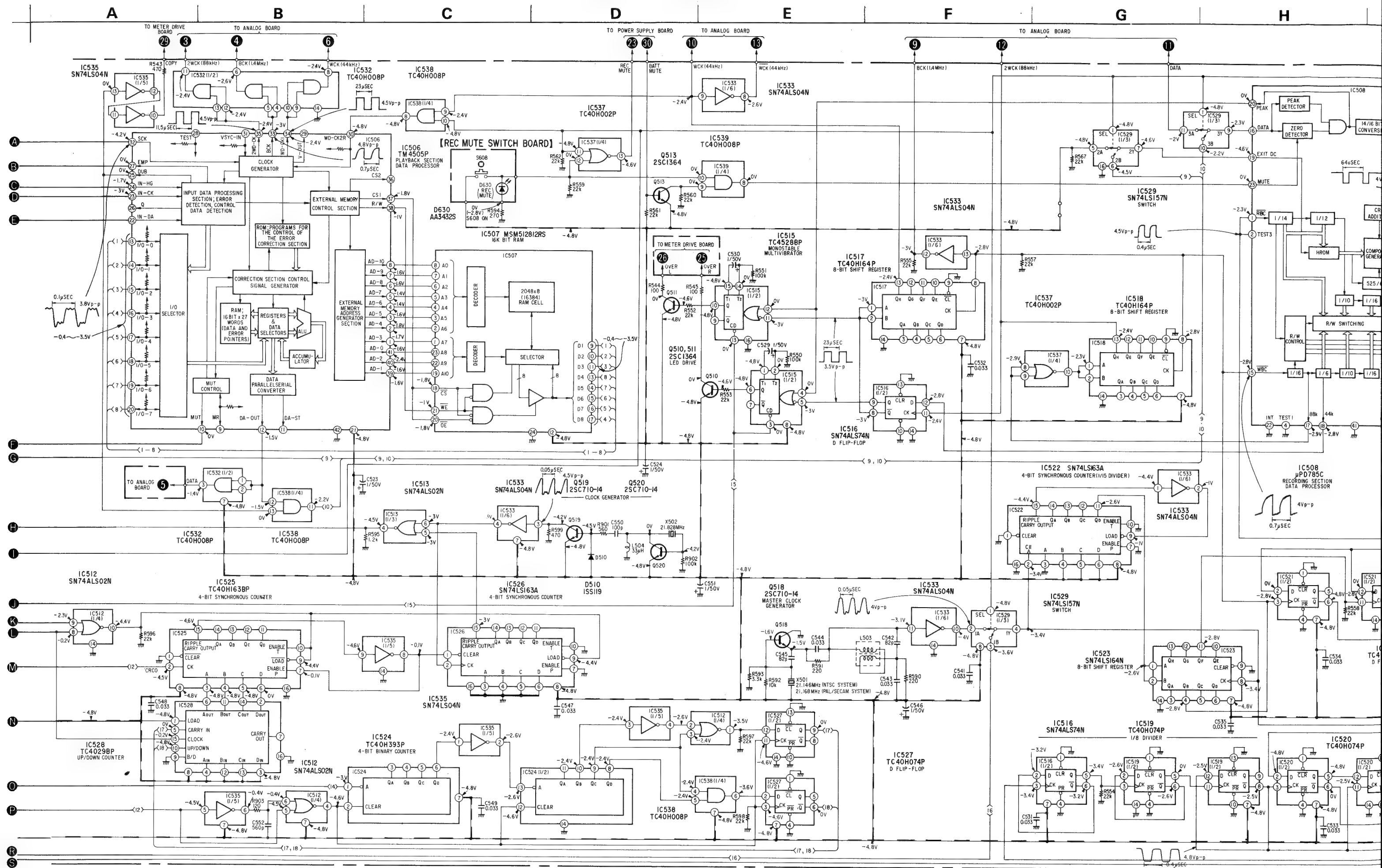


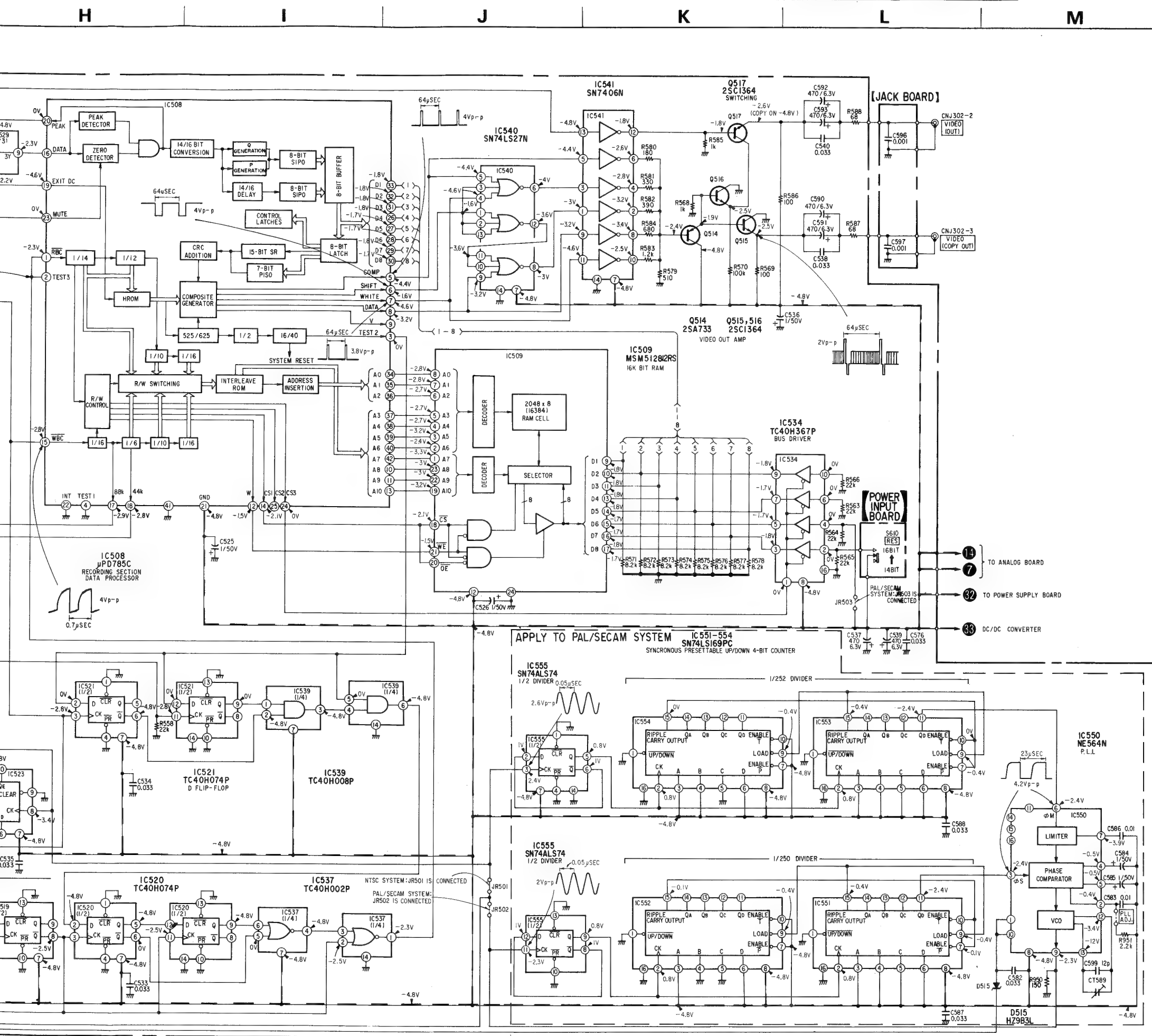
**Semiconductor Lead Layouts:** See Page 25.  
**Circuit Board Location:** See page 25.

**PCM-F1**      **PCM-F1**



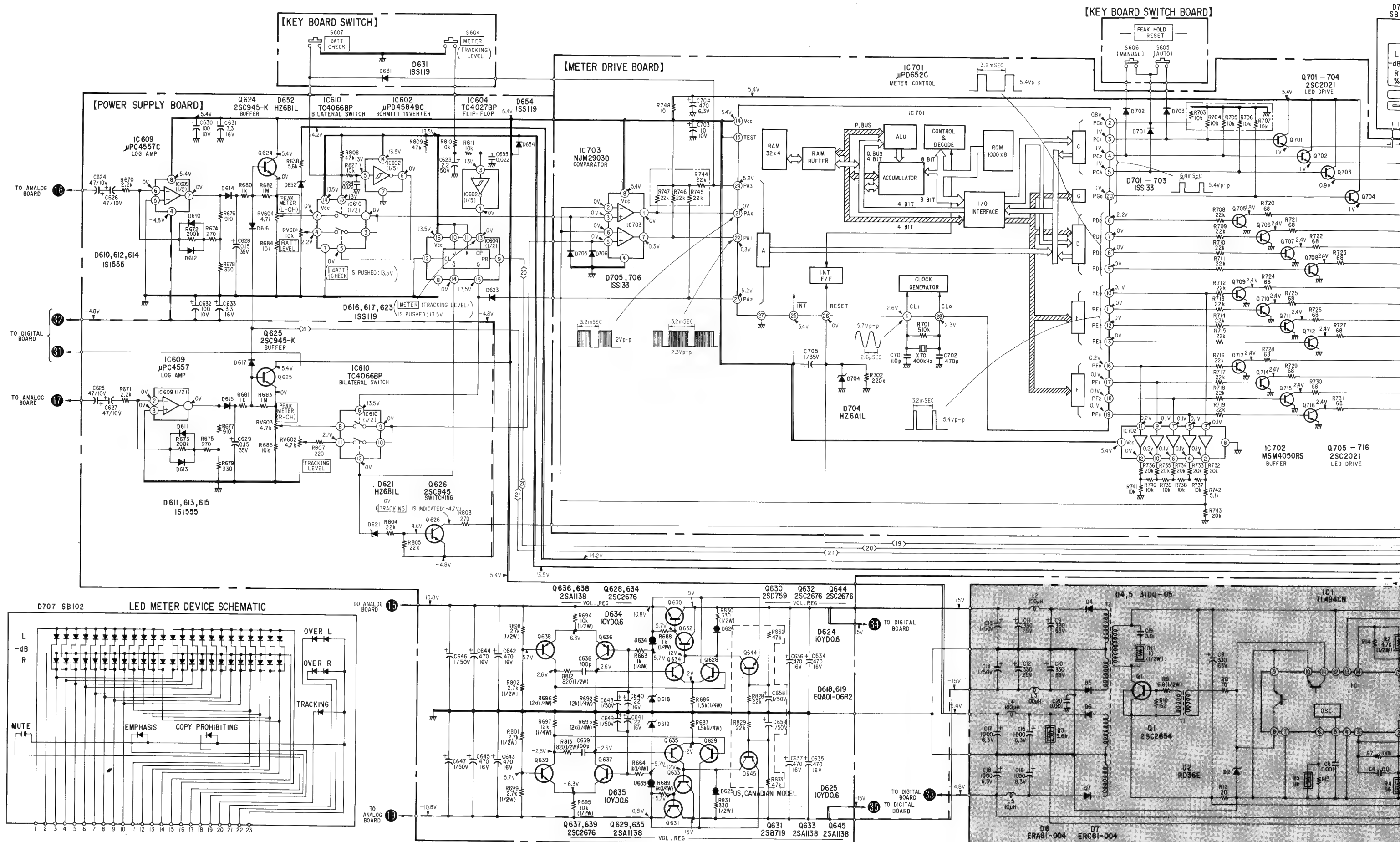
**PCM-F1**      **PCM-F1**



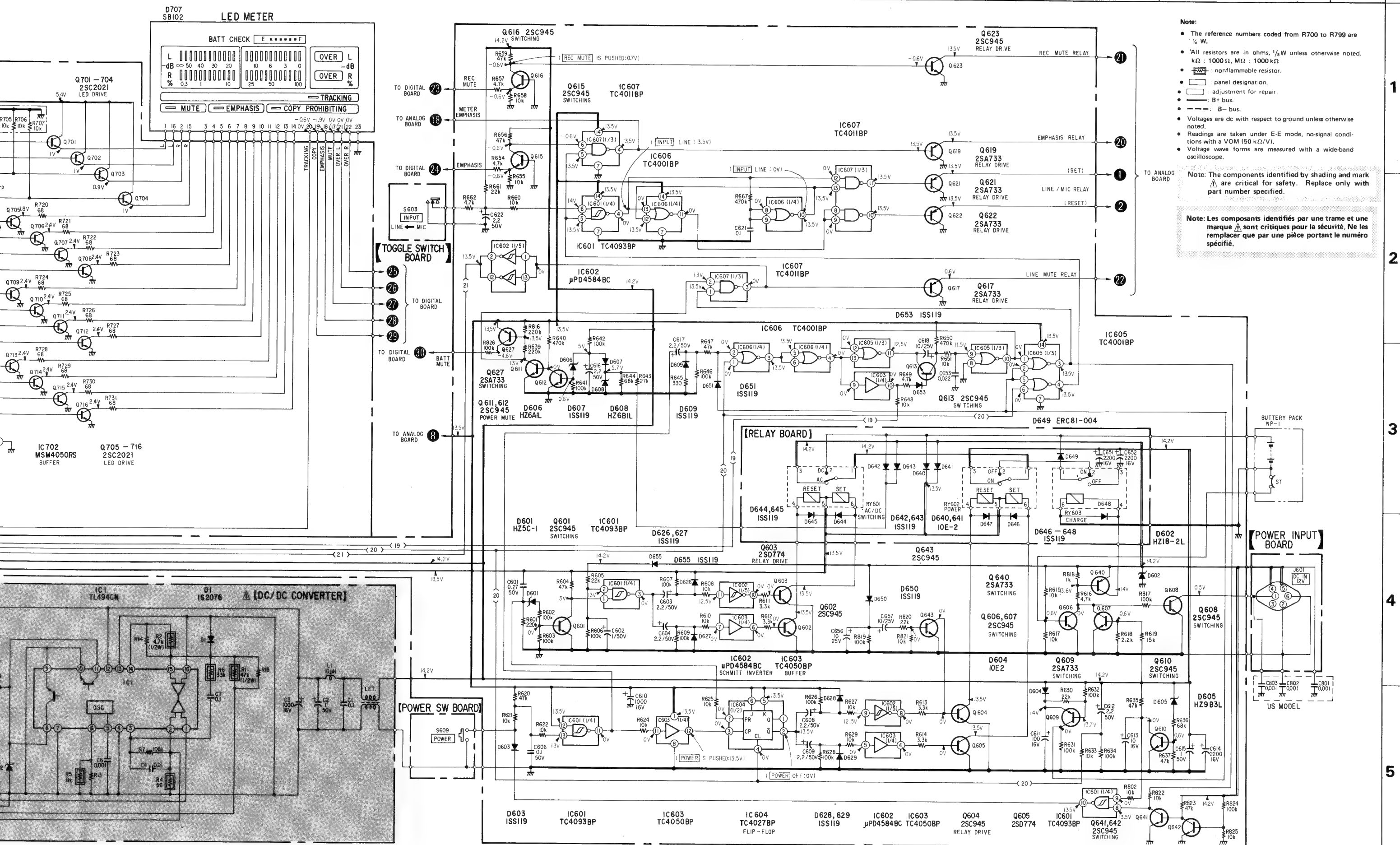


1  
2  
3  
4  
5

- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} : \mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in ohms,  $\frac{1}{4}\text{W}$  unless otherwise noted.  $\text{k}\Omega : 1000\Omega$ ,  $\text{M}\Omega : 1000\text{k}\Omega$
  - : panel designation.
  - : adjustment for repair.
  - — : B+ bus.
  - - - - : B- bus.
  - Voltages are dc with respect to ground unless otherwise noted.
  - Readings are taken under E-E mode, no-signal conditions with a VOM (50  $\text{k}\Omega/\text{V}$ ).
  - Voltage/waveforms are measured with a wide-band oscilloscope.



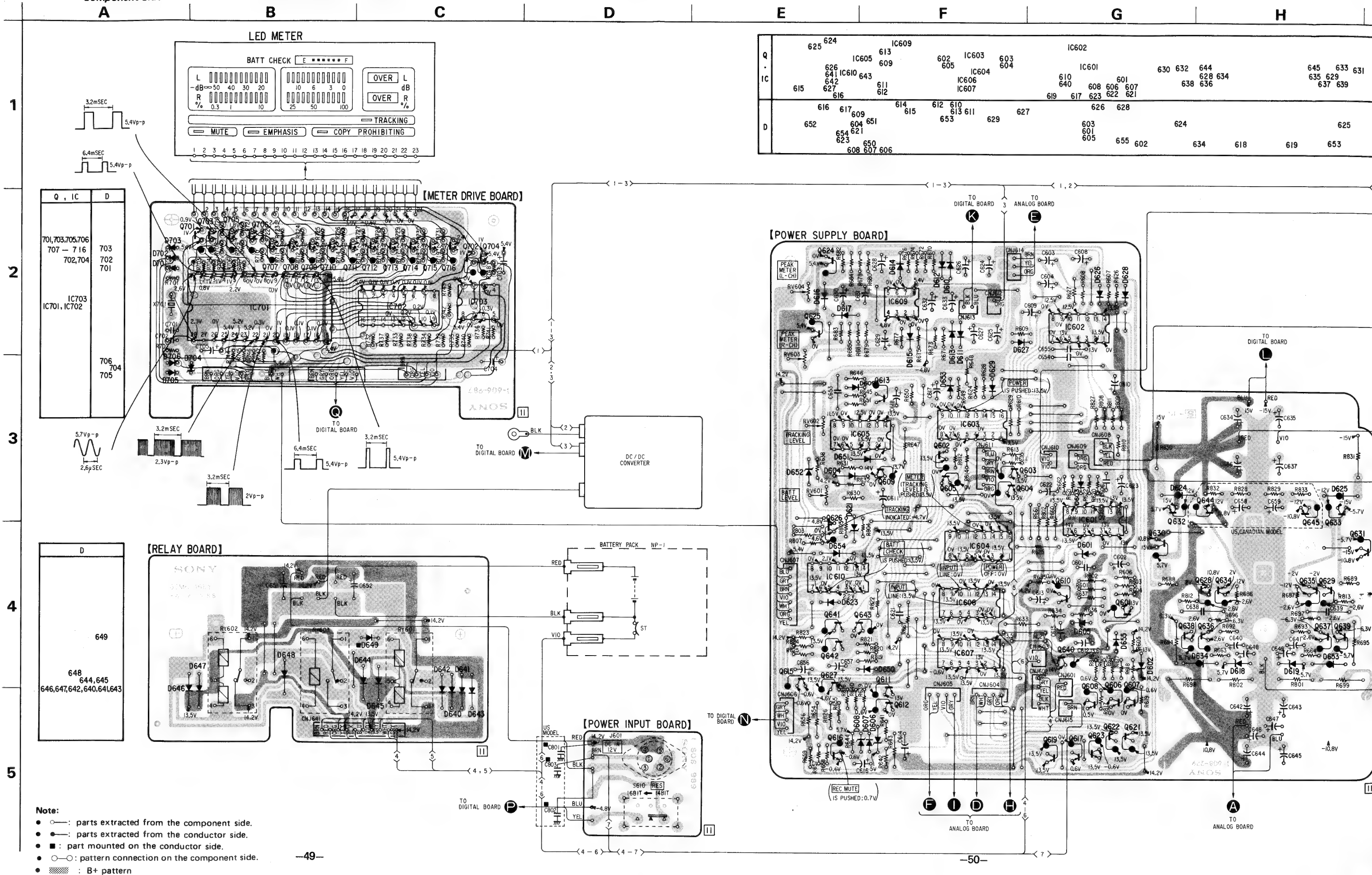




# 4-6. MOUNTING DIAGRAM —Component Side—

Semiconductor Lead Layouts: See Page 25.  
Circuit Board Location: See page 25.

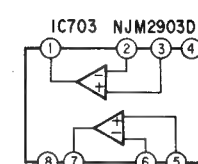
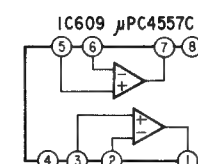
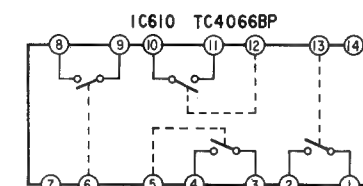
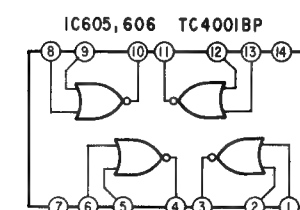
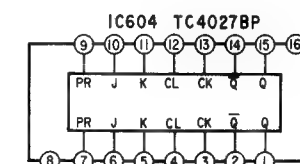
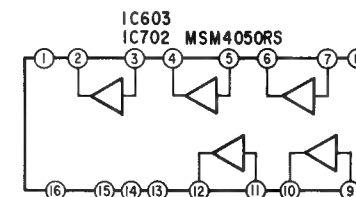
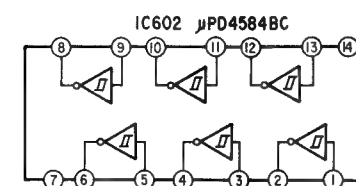
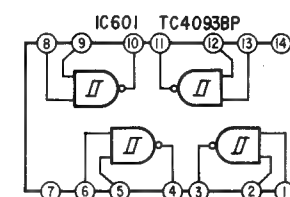
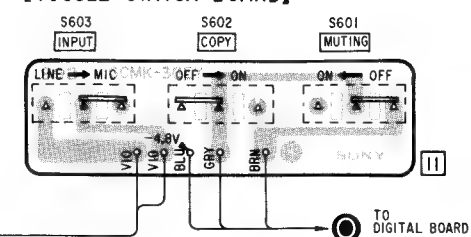
PCM-F1 PCM-F1



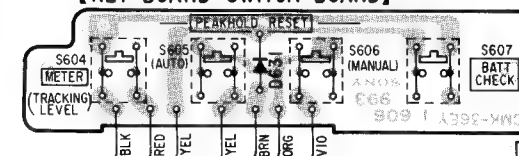


[illegible]

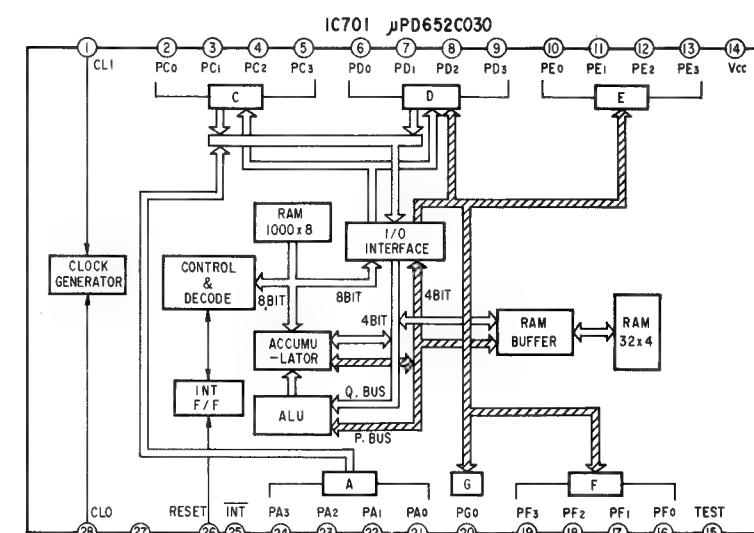
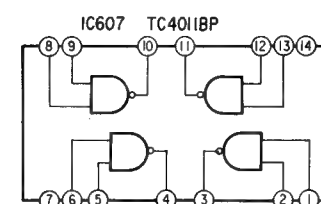
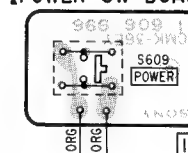
【TOGGLE SWITCH BOARD】



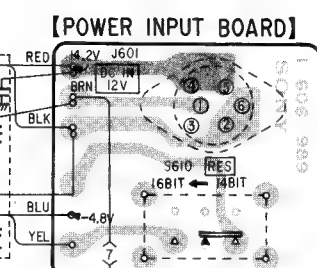
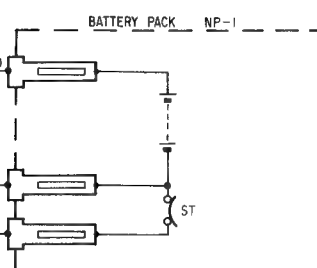
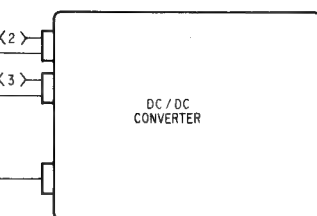
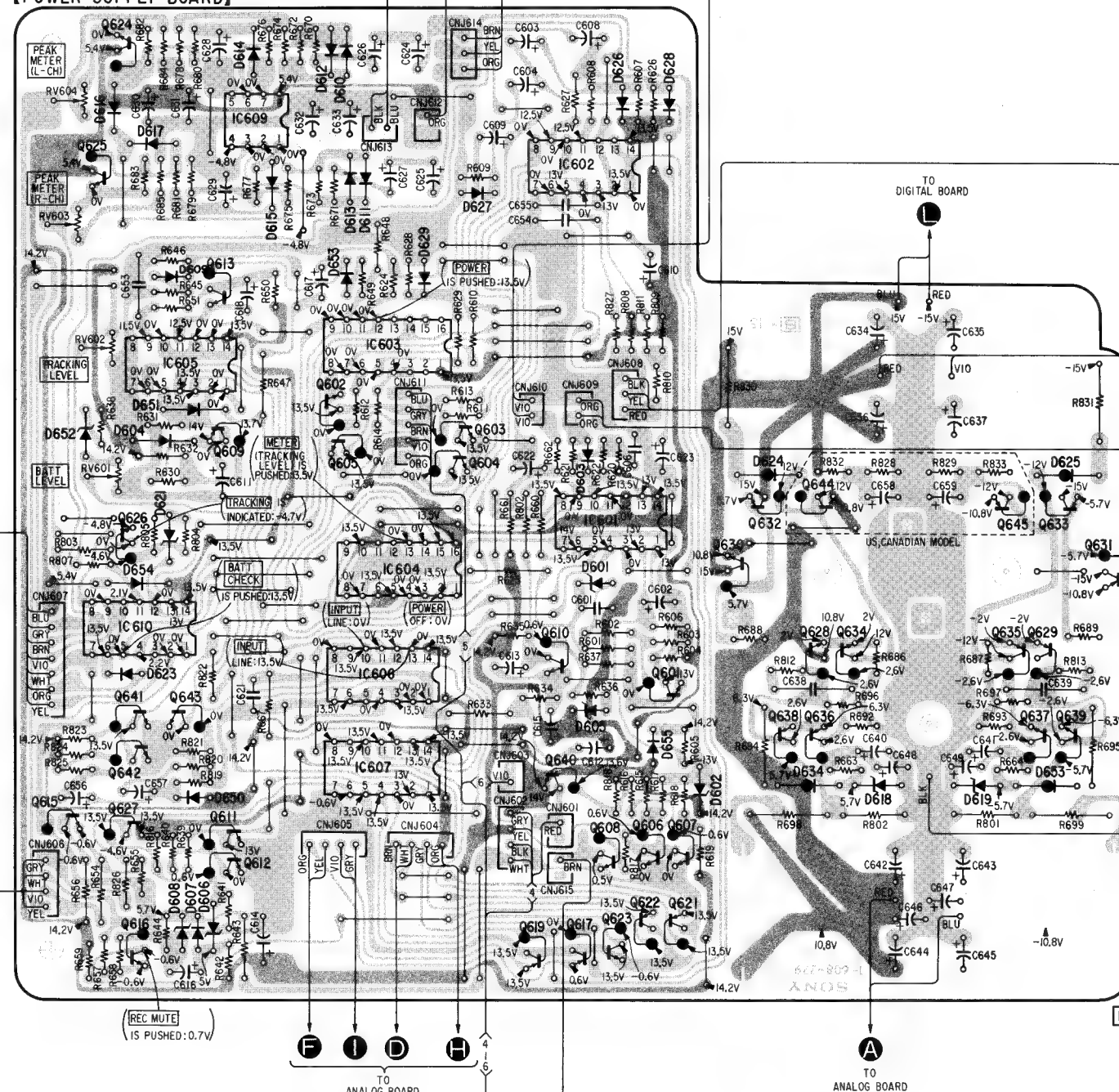
【KEY BOARD SWITCH BOARD】



**[POWER SW BOARD]**

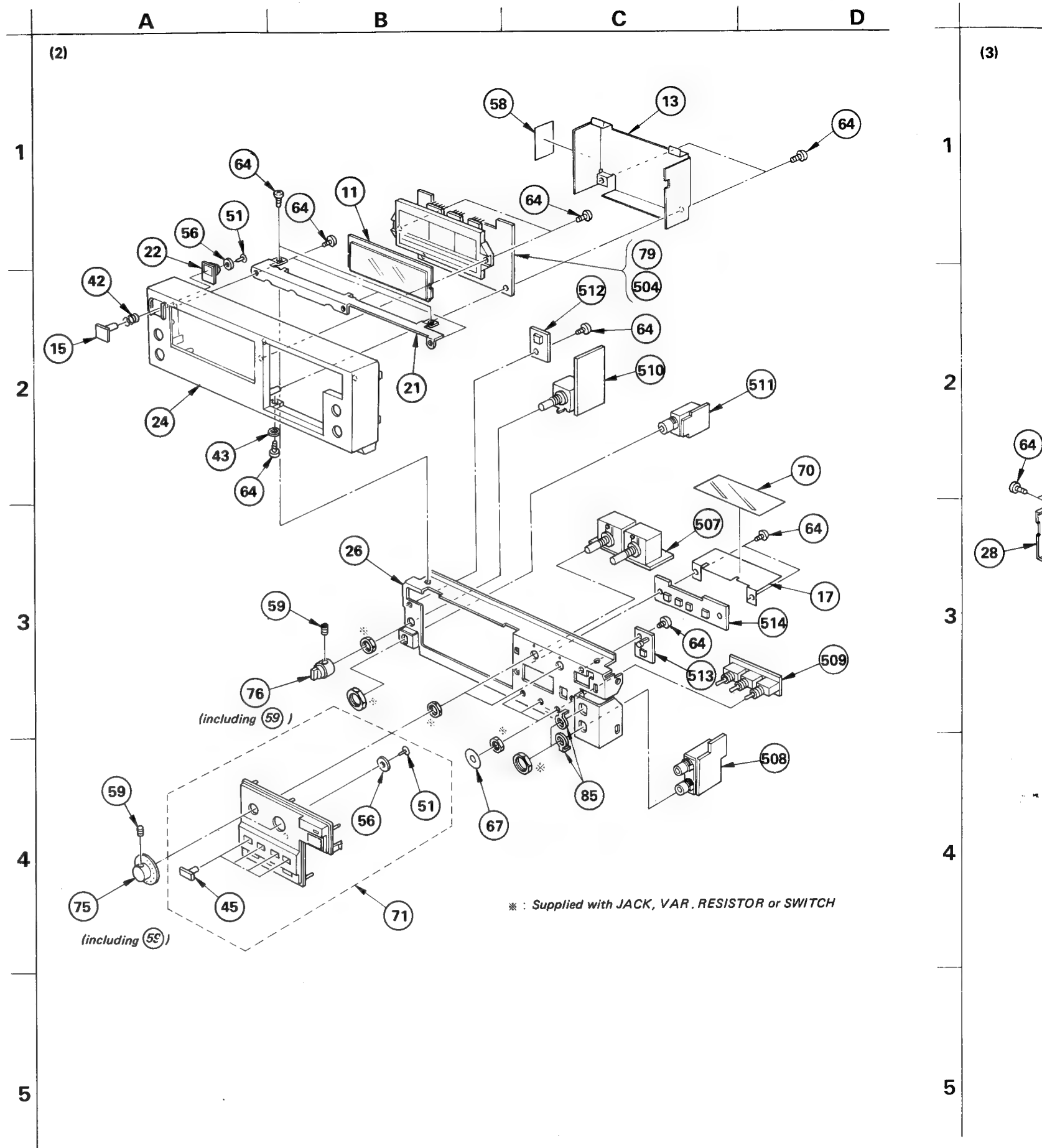


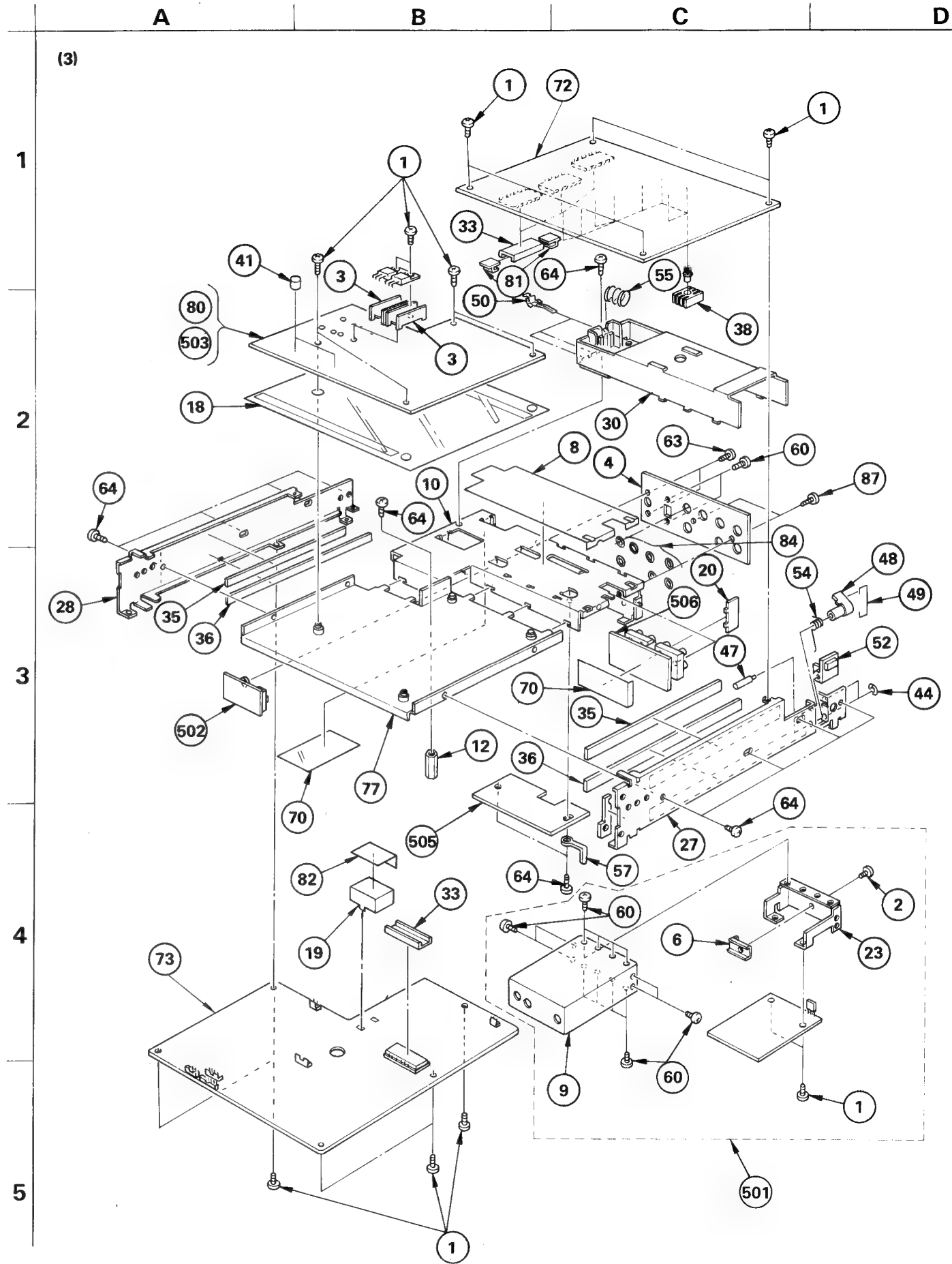
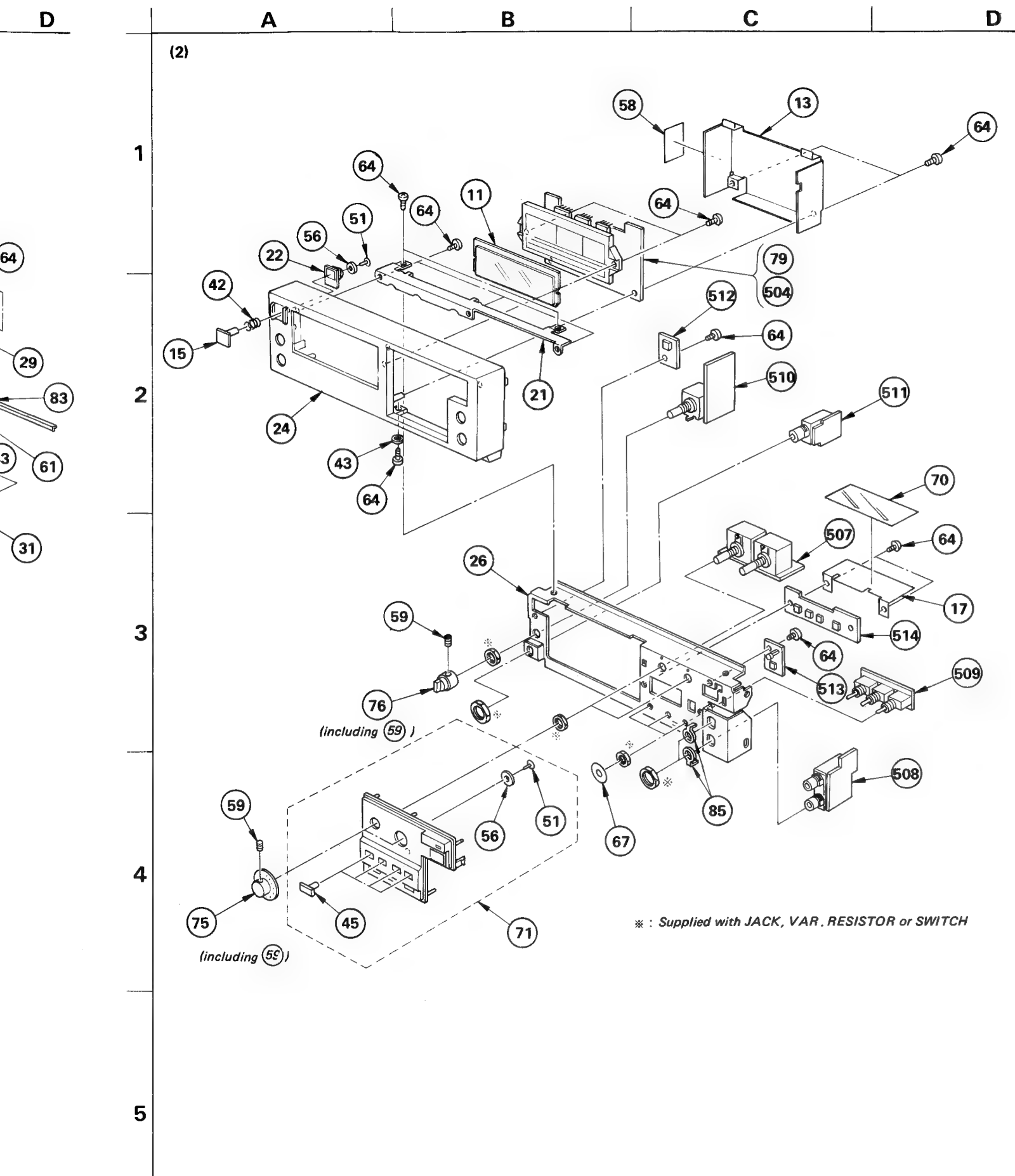
**【POWER SUPPLY BOARD】**





## SECTION 5





## PCM-F1 PCM-F1

## GENERAL SECTION

No.	Part No.	Description
1	2-259-121-00	SCREW, TR
2	2-259-121-21	SCREW, TR
3	2-362-302-00	HEAT SINK, HORIZONTAL, TO-126
4	2-362-303-02	PLATE, JACK
5	2-362-305-00	INSULATOR, SHIELD PLATE, LOWER
6	2-362-308-00	CLAMP, TRANSISTOR
7	2-362-309-00	PLATE (LOWER), SHIELD
8	2-362-310-00	SHEET, BATTERY
9	2-362-311-00	CASE, PLPS
10	2-362-312-00	CHASSIS, REAR
11	2-362-315-00	WINDOW, METER
12	2-362-318-00	SUPPORT, BOTTOM PLATE
13	2-362-319-00	PLATE, SHIELD, METER
14	2-362-320-00	(Canadian,AEP,UK)...CUSHION, BOTTOM PLATE
14	2-362-320-11	(US).....CUSHION, BOTTOM PLATE
15	2-362-321-00	BUTTON, POWER
16	2-362-324-00	SHAFT, BATTERY LID
17	2-362-326-00	PLATE, SHIELD, REC CONTROL
18	2-362-327-00	INSULATOR, SHIELD PLATE, CENTER
19	2-362-376-00	CASE (2), SHIELD, VCO
20	2-362-331-00	PLATE, SHIELD, JACK
21	2-362-334-00	BRACKET, PANEL
22	2-362-335-00	ESCUTCHEON, POWER SWITCH
23	2-362-336-00	PLATE
24	2-362-337-11	(PAL/SECAM)...PANEL, FRONT
24	2-362-337-00	(NTSC).....PANEL, FRONT
25	2-362-339-00	(Canadian,AEP,UK)...PLATE, BOTTOM
25	2-362-339-11	(US).....PLATE, BOTTOM
26	2-362-340-00	CHASSIS, AMPLIFIER
27	2-362-341-00	PLATE (RIGHT), SIDE
28	2-362-342-00	PLATE (LEFT), SIDE
29	2-362-344-00	ESCUTCHEON, BATTERY
30	2-362-345-00	HOLDER, BATTERY
31	2-362-347-00	(Canadian,AEP,UK)...PANEL, REAR
31	2-362-347-11	(US).....PANEL, REAR
32	2-362-373-00	LABEL, MODEL NUMBER (US,AEP)
33	2-362-355-00	HEAT SINK, IC
34	2-362-358-11	MANUAL, INSTRUCTION
35	2-362-359-00	PLATE, VIBRATION CONTROL
36	2-362-360-00	PLATE, VIBRATION CONTROL
37	2-362-362-00	PLATE, VIBRATION CONTROL
38	2-362-364-00	HEAT SINK, OPERATION AMPLIFIER
38	2-362-364-11	HEAT SINK, OPERATION AMPLIFIER (for IC103)
39	2-362-365-00	FOOT, RUBBER
40	2-362-370-01	INSULATOR, MICROPHONE JACK

## GENERAL SECTION

No.	Part No.	Description
41	2-362-372-00	CAP (CK)
42	3-434-052-00	SPRING, COMPRESSION
43	3-558-708-21	WASHER, STOPPER
44	3-570-615-00	POLY-WASHER (DIA.1.2)
45	3-669-492-00	BUTTON (A), F
46	3-669-517-11	(US,Canadian)...LID, BATTERY CASE
46	3-669-517-41	(AEP,UK).....LID, BATTERY CASE
47	3-669-523-00	SHAFT (C)
48	3-669-524-00	CLAW
49	3-669-525-00	LEVER (B)
50	3-669-526-00	TERMINAL
51	3-669-528-00	CAP, BUTTON
52	3-669-574-00	KNOB (B)
53	3-669-592-00	SPRING (A), TORSION
54	3-669-593-00	SPRING (B), TORSION
55	3-669-594-00	SPRING, COMPRESSION
56	3-701-437-11	WASHER
57	3-701-822-00	HOLDER, WIRE
58	4-866-646-00	INSULATOR (B)
59	7-621-734-09	SET-SCT, HEX. 2.6X3
60	7-621-775-10	SCREW +B 2.6X4
61	7-682-147-09	SCREW +P 3X6
62	7-682-245-04	SCREW +K 3X4
63	7-685-546-19	SCREW +BTP 3X8 TYPE2 N-S
64	7-685-751-01	SCREW +PTT 3X6 (S)
65	7-685-752-09	SCREW +PTT 3X8 (S)
66	9-911-815-02	CUSHION, CIRCUIT BREAKER
67	9-911-838-XX	ESCUTCHEON, TOGGLE SWITCH
68	9-911-845-XX	DAMPER (B), CAPSULE
69	9-911-851-XX	CUSHION
70	9-911-863-XX	INSULATOR, SHIELD PLATE, CONTROL
71	A-4322-415-A	PANEL ASSY, FRONT, SUB
72	A-4334-004-A	MOUNTED PCB, ANALOG
73	A-4335-237-A	MOUNTED PCB, DIGITAL
74	X-2362-302-0	RING ASSY, HANDLE
75	X-2362-303-0	KNOB ASSY, REC
76	X-2362-304-0	KNOB ASSY, HEADPHONE
77	X-2362-305-0	PLATE ASSY, SHIELD, CENTER
78	X-2362-307-1	CASE, UPPER
79	A-4380-038-A	MOUNTED PCB, DRIVE, METER
80	A-4394-278-A	MOUNTED PCB, POWER
81	2-362-371-00	CLIP, IC
82	2-362-374-00	INSULATOR, VCO
83	2-362-375-00	CUSHION, REAR PANEL

## GENERAL SECTION

No.	Part No.	Description
84	2-362-381-11	(US)....RING, SHORT
85	2-362-382-00	(US)....LUG, JUCK
86	2-362-383-00	(US)....LABEL, FCC APPROVAL
87	2-362-384-00	(US)....SCREW, +PTPH 3X10
88	3-701-690-00	(UK)....LABEL (MADE IN JAPAN)

## ACCESSORY &amp; PACKING MATERIAL

No.	Part No.	Description
101	A-1-463-428-00	(AEP).....ADAPTOR, AC (AC-700)
101	A-1-463-429-00	(US).....ADAPTOR, AC (AC-700)
101	A-1-463-430-00	(UK).....ADAPTOR, AC (AC-700)
101	A-1-463-439-00	(Canadian)....ADAPTOR, AC (AC-700)
102	1-551-315-00	CORD, CONNECTION
103	1-556-254-00	CORD, CONNECTION
104	1-551-086-31	(US,Canadian)...CORD, CONNECTION
104	1-556-464-00	(AEP,UK).....CORD, CONNECTION
105	2-362-351-00	CUSHION, LOWER
106	2-362-352-00	CUSHION, UPPER
107	2-362-380-00	INDIVIDUAL CARTON
108	3-701-626-00	BAG, POLYETHYLENE
109	3-701-630-00	BAG, POLYETHYLENE
110	3-701-632-00	BAG, POLYETHYLENE
111	3-783-877-11	(AEP,UK).....MANUAL, INSTRUCTION
111	3-783-877-21	(US,Canadian)...MANUAL, INSTRUCTION
111	3-783-877-31	(Canadian).....MANUAL, INSTRUCTION
111	3-783-877-41	(AEP).....MANUAL, INSTRUCTION
112	4-825-727-00	SHEET, PROTECTION
113	X-3669-375-0	STRAP ASSY (A)

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	A-1-464-196-00	(AEP,UK).....CONVERTER UNIT, DC-DC
501	A-1-464-987-00	(US,Canadian)...CONVERTER UNIT, DC-DC
502	1-606-989-00	PC BOARD, POWER INPUT
503	1-606-986-00	PC BOARD, POWER
504	1-606-987-00	PC BOARD, METER DRIVE
505	1-606-988-00	PC BOARD, RELAY
506	1-606-990-00	PC BOARD, 4P PIN JACK
507	1-606-991-00	PC BOARD, REC VR
508	1-606-992-00	PC BOARD, MIC JACK
509	1-606-993-00	PC BOARD, TOGGLE SWITCH
510	1-606-994-00	PC BOARD, HEADPHONE ATT
511	1-606-995-00	PC BOARD, HEADPHONE JACK
512	1-606-996-00	PC BOARD, POWER SWITCH
513	1-606-997-00	PC BOARD, REC MUTE SW
514	1-606-998-00	PC BOARD, KEY BOARD SWITCH
C102	1-107-294-00	MICA 56PF 5% 100V
C104	1-107-284-00	MICA 22PF 5% 100V
C105	1-123-830-00	ELECT 4.7MF 20% 50V
C110	1-107-165-00	MICA 56PF 5% 500V
C111	1-107-309-00	MICA 100PF 5% 500V
C112	1-107-322-00	MICA 22PF 5% 500V
C113	1-130-922-00	FILM 0.0056MF 2% 250V
C114	1-131-450-91	TANTALUM 1MF 20% 50V
C115	1-131-450-91	TANTALUM 1MF 20% 50V
C116	1-131-450-91	TANTALUM 1MF 20% 50V
C117	1-131-450-91	TANTALUM 1MF 20% 50V
C118	1-131-450-91	TANTALUM 1MF 20% 50V
C119	1-131-522-00	TANTALUM 10MF 20% 25V
C120	1-131-522-00	TANTALUM 10MF 20% 25V
C121	1-107-308-00	MICA 220PF 5% 100V
C122	1-131-450-91	TANTALUM 1MF 20% 50V
C123	1-131-450-91	TANTALUM 1MF 20% 50V
C124	1-131-450-91	TANTALUM 1MF 20% 50V
C125	1-104-230-00	POLYSTYRENE 0.0015MF 5% 500V
C126	1-131-450-91	TANTALUM 1MF 20% 50V
C127	1-131-450-91	TANTALUM 1MF 20% 50V
C134	1-131-371-71	TANTALUM 10MF 20% 16V
C135	1-131-371-71	TANTALUM 10MF 20% 16V
C136	1-131-371-71	TANTALUM 10MF 20% 16V
C137	1-131-450-91	TANTALUM 1MF 20% 50V
C140	1-123-830-00	ELECT 4.7MF 20% 50V
C143	1-104-230-00	POLYSTYRENE 0.0015MF 5% 500V
C144	1-131-450-91	TANTALUM 1MF 20% 50V
C145	1-131-450-91	TANTALUM 1MF 20% 50V
C146	1-131-450-91	TANTALUM 1MF 20% 50V

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF, PF: μμF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F: nonflammable

## COILS

- MMH: mH, UH: μH

## SEMICONDUCTORS

- In each case, U: μ, for example:  
UA....: μA...., UPA....: μPA...., UPC....: μPC,  
UPD....: μPD....

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF, PF: μμF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F: nonflammable

## COILS

- MMH: mH, UH: μH

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

## SEMICONDUCTORS

- In each case, U: μ, for example:  
UA....: μA...., UPA....: μPA...., UPC....: μPC,  
UPD....: μPD....

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C147	1-107-317-00	MICA	33PF	5%	500V
C148	1-131-450-91	TANTALUM	1MF	20%	50V
C149	1-131-450-91	TANTALUM	1MF	20%	50V
C150	1-131-450-91	TANTALUM	1MF	20%	50V
C151	1-131-450-91	TANTALUM	1MF	20%	50V
C153	1-107-324-00	MICA	0.0039MF	2%	100V
C154	1-131-522-00	TANTALUM	10MF	20%	25V
C155	1-131-522-00	TANTALUM	10MF	20%	25V
C156	1-107-310-00	MICA	220PF	5%	500V
C157	1-131-450-91	TANTALUM	1MF	20%	50V
C158	1-131-450-91	TANTALUM	1MF	20%	50V
C159	1-130-621-00	FILM	0.012MF	5%	50V
C162	1-131-371-71	TANTALUM	10MF	20%	16V
C202	1-107-294-00	MICA	56PF	5%	100V
C204	1-107-284-00	MICA	22PF	5%	100V
C205	1-123-830-00	ELECT	4.7MF	20%	50V
C210	1-107-165-00	MICA	56PF	5%	500V
C211	1-107-309-00	MICA	100PF	5%	500V
C212	1-107-322-00	MICA	22PF	5%	500V
C213	1-130-922-00	FILM	0.0056MF	2%	250V
C214	1-131-450-91	TANTALUM	1MF	20%	50V
C215	1-131-450-91	TANTALUM	1MF	20%	50V
C216	1-131-450-91	TANTALUM	1MF	20%	50V
C217	1-131-450-91	TANTALUM	1MF	20%	50V
C218	1-131-450-91	TANTALUM	1MF	20%	50V
C219	1-131-522-00	TANTALUM	10MF	20%	25V
C220	1-131-522-00	TANTALUM	10MF	20%	25V
C221	1-107-308-00	MICA	220PF	5%	100V
C222	1-131-450-91	TANTALUM	1MF	20%	50V
C223	1-131-450-91	TANTALUM	1MF	20%	50V
C224	1-131-450-91	TANTALUM	1MF	20%	50V
C225	1-104-230-00	POLYSTYRENE	0.0015MF	5%	500V
C226	1-131-450-91	TANTALUM	1MF	20%	50V
C227	1-131-450-91	TANTALUM	1MF	20%	50V
C234	1-131-371-71	TANTALUM	10MF	20%	16V
C235	1-131-371-71	TANTALUM	10MF	20%	16V
C236	1-131-371-71	TANTALUM	10MF	20%	16V
C237	1-131-450-91	TANTALUM	1MF	20%	50V
C240	1-123-830-00	ELECT	4.7MF	20%	50V
C243	1-104-230-00	POLYSTYRENE	0.0015MF	5%	500V
C244	1-131-450-91	TANTALUM	1MF	20%	50V
C245	1-131-450-91	TANTALUM	1MF	20%	50V
C246	1-131-450-91	TANTALUM	1MF	20%	50V
C247	1-107-317-00	MICA	33PF	5%	500V
C248	1-131-450-91	TANTALUM	1MF	20%	50V

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C249	1-131-450-91	TANTALUM	1MF	20%	50V
C250	1-131-450-91	TANTALUM	1MF	20%	50V
C251	1-131-450-91	TANTALUM	1MF	20%	50V
C253	1-107-324-00	MICA	0.0039MF	2%	100V
C254	1-131-522-00	TANTALUM	10MF	20%	25V
C255	1-131-522-00	TANTALUM	10MF	20%	25V
C256	1-107-310-00	MICA	220PF	5%	500V
C257	1-131-450-91	TANTALUM	1MF	20%	50V
C258	1-131-450-91	TANTALUM	1MF	20%	50V
C259	1-130-621-00	FILM	0.012MF	5%	50V
C262	1-131-371-71	TANTALUM	10MF	20%	16V
C301	1-131-371-71	TANTALUM	10MF	20%	16V
C304	1-131-371-71	TANTALUM	10MF	20%	16V
C305	1-131-450-91	TANTALUM	1MF	20%	50V
C306	1-131-450-91	TANTALUM	1MF	20%	50V
C308	1-131-450-91	TANTALUM	1MF	20%	50V
C309	1-131-371-71	TANTALUM	10MF	20%	16V
C312	1-131-371-71	TANTALUM	10MF	20%	16V
C313	1-131-371-71	TANTALUM	10MF	20%	16V
C314	1-131-450-91	TANTALUM	1MF	20%	50V
C320	1-131-450-00	TANTALUM	1MF	20%	35V
C321	1-131-450-00	TANTALUM	1MF	20%	35V
C322	1-131-450-91	TANTALUM	1MF	20%	50V
C323	1-131-450-91	TANTALUM	1MF	20%	50V
C325	1-161-323-00	CERAMIC	0.001MF	10%	50V
C503	1-123-230-00	ELECT	2.2MF	20%	50V
C510	1-131-343-71	TANTALUM	0.22MF	20%	35V
C511	1-123-230-00	ELECT	2.2MF	20%	50V
C515	1-131-343-71	TANTALUM	0.22MF	20%	35V
C519	1-131-343-71	TANTALUM	0.22MF	20%	35V
C522	1-131-450-91	TANTALUM	1MF	20%	50V
C523	1-131-450-91	TANTALUM	1MF	20%	50V
C524	1-131-450-91	TANTALUM	1MF	20%	50V
C525	1-131-450-91	TANTALUM	1MF	20%	50V
C526	1-131-450-91	TANTALUM	1MF	20%	50V
C536	1-131-450-91	TANTALUM	1MF	20%	50V
C546	1-131-450-91	TANTALUM	1MF	20%	50V
C551	1-131-450-91	TANTALUM	1MF	20%	50V
C552	1-102-157-00	CERAMIC	560PF	10%	500V
C558	1-131-341-91	TANTALUM	0.1MF	10%	35V
C559	1-131-344-91	TANTALUM	0.33MF	10%	35V
C560	1-131-346-91	TANTALUM	0.68MF	10%	35V
C563	1-131-371-00	TANTALUM	10MF	10%	16V
C570	1-131-450-91	TANTALUM	1MF	20%	50V
C572	1-131-450-91	TANTALUM	1MF	20%	50V

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C584	1-131-347-00	TANTALUM	1MF	20%	35V
C585	1-131-347-00	TANTALUM	1MF	20%	35V
C590	1-102-716-00	CERAMIC	12PF	5%	50V
C601	1-130-637-	FILM	0.27MF	5%	50V
C610	1-123-324-00	ELECT	1000MF	20%	16V
C614	1-123-325-00	ELECT	2200MF	20%	16V
C615	1-131-450-91	TANTALUM	1MF	20%	50V
C621	1-130-632-00	FILM	0.1MF	5%	50V
C628	1-131-342-91	TANTALUM	0.15MF	10%	35V
C629	1-131-342-91	TANTALUM	0.15MF	10%	35V
C631	1-131-368-71	TANTALUM	3.3MF	20%	16V
C633	1-131-368-71	TANTALUM	3.3MF	20%	16V
C634	1-123-685-00	ELECT	470MF	20%	16V
C635	1-123-685-00	ELECT	470MF	20%	16V
C636	1-123-685-00	ELECT	470MF	20%	16V
C637	1-123-685-00	ELECT	470MF	20%	16V
C638	1-107-309-00	MICA	100PF	5%	500V
C639	1-107-309-00	MICA	100PF	5%	500V
C640	1-131-520-00	TANTALUM	22MF	20%	16V
C641	1-131-520-00	TANTALUM	22MF	20%	16V
C642	1-123-685-00	ELECT	470MF	20%	16V
C643	1-123-685-00	ELECT	470MF	20%	16V
C644	1-123-685-00	ELECT	470MF	20%	16V
C645	1-123-685-00	ELECT	470MF	20%	16V
C646	1-131-450-91	TANTALUM	1MF	20%	50V
C647	1-131-450-91	TANTALUM	1MF	20%	50V
C648	1-131-450-91	TANTALUM	1MF	20%	50V
C649	1-131-450-91	TANTALUM	1MF	20%	50V
C651	1-123-687-11	ELECT	2200MF	20%	16V
C652	1-123-687-11	ELECT	2200MF	20%	16V
C703	1-131-377-00	TANTALUM	10MF	20%	10V
C704	1-123-298-00	ELECT	470MF	20%	6.3V
C705	1-131-347-00	TANTALUM	1MF	20%	35V
CNJ301	1-507-740-21	JACK, PIN 4P			
CNJ302	1-507-775-00	JACK, PIN 3P			
CT589	1-141-232-00	CAP, TRIMAR 11PF			
D101	8-719-200-47	DIODE 10YD4.5B			
D102	8-719-224-11	DIODE 10YD2.4A			
D103	8-719-300-02	DIODE SV-02			
D104	8-719-200-04	DIODE 10YD1.3B			
D105	8-719-910-65	DIODE HZ6B2L			
D106	8-719-911-19	DIODE 1SS119			
D107	8-719-910-65	DIODE HZ6B2L			
D108	8-719-200-04	DIODE 10YD1.3B			
D109	8-719-911-50	DIODE HZ5C1			

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
D110	8-719-911-50	DIODE HZ5C1			
D201	8-719-200-47	DIODE 10YD4.5B			
D202	8-719-224-11	DIODE 10YD2.4A			
D203	8-719-300-02	DIODE SV-02			
D204	8-719-200-04	DIODE 10YD1.3B			
D205	8-719-910-65	DIODE HZ6B2L			
D206	8-719-911-19	DIODE 1SS119			
D207	8-719-910-65	DIODE HZ6B2L			
D208	8-719-200-04	DIODE 10YD1.3B			
D209	8-719-911-50	DIODE HZ5C1			
D210	8-719-911-50	DIODE HZ5C1			
D301	8-719-911-19	DIODE 1SS119T1			
D302	8-719-911-19	DIODE 1SS119T1			
D303	8-719-911-19	DIODE 1SS119T1			
D304	8-719-911-19	DIODE 1SS119T1			
D305	8-719-911-19	DIODE 1SS119T1			
D310	8-719-910-65	DIODE HZ6B2L			
D501	8-719-911-19	DIODE 1SS119			
D502	8-719-911-19	DIODE 1SS119			
D503	8-719-911-19	DIODE 1SS119			
D504	8-719-911-19	DIODE 1SS119			
D505	8-719-911-19	DIODE 1SS119			
D506	8-719-911-19	DIODE 1SS119			
D507	8-719-910-75	DIODE HZ7B2L			
D508	8-719-911-19	DIODE 1SS119			
D509	8-719-911-19	DIODE 1SS119			
D510	8-719-911-19	DIODE 1SS119			
D511	8-719-915-43	DIODE FC54M			
D512	8-719-911-19	DIODE 1SS119			
D513	8-719-911-19	DIODE 1SS119			
D514	8-719-911-19	DIODE 1SS119			
D515	8-719-910-96	DIODE HZ9B3L			
D601	8-719-911-50	DIODE HZ5C1			
D602	8-719-910-82	DIODE HZ18-2L			
D603	8-719-911-19	DIODE 1SS119			
D604	8-719-200-02	DIODE 10E-2			
D605	8-719-910-96	DIODE HZ9B3L			
D606	8-719-910-61	DIODE HZ6A1L			
D607	8-719-911-19	DIODE 1SS119			
D608	8-719-910-64	DIODE HZ6B1L			
D609	8-719-911-19	DIODE 1SS119			
D610	8-719-815-55	DIODE 1S1555			
D611	8-719-815-55	DIODE 1S1555			
D612	8-719-815-55	DIODE 1S1555			
D613	8-719-815-55	DIODE 1S1555			

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- Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF: μF, PF: μμF.

## RESISTORS

All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

F : nonflammable

## COILS

MMH : mH, UH : μH

## SEMICONDUCTORS

In each case, U : μ, for example:  
UA.... : μA..., UPA.... : μPA..., UPC.... : μPC,  
UPD.... : μPD....

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF: μF, PF: μμF.

## RESISTORS

All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

F : nonflammable

## COILS

MMH : mH, UH : μH

## SEMICONDUCTORS

In each case, U : μ, for example:  
UA.... : μA..., UPA.... : μPA..., UPC.... : μPC,  
UPD.... : μPD....

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
D614	8-719-815-55	DIODE 1S1555
D615	8-719-815-55	DIODE 1S1555
D616	8-719-911-19	DIODE 1SS119
D617	8-719-911-19	DIODE 1SS119
D618	8-719-902-97	DIODE EQA01-06R2
D619	8-719-902-97	DIODE EQA01-06R2
D621	8-719-910-64	DIODE HZ6B1L
D623	8-719-911-19	DIODE 1SS119
D624	8-719-200-06	DIODE 10YD0.6
D625	8-719-200-06	DIODE 10YD0.6
D626	8-719-911-19	DIODE 1SS119
D627	8-719-911-19	DIODE 1SS119
D628	8-719-911-19	DIODE 1SS119
D629	8-719-911-19	DIODE 1SS119
D630	8-719-934-34	DIODE AA3432S
D631	8-719-911-19	DIODE 1SS119
D634	8-719-224-11	DIODE 10YD2.4A
D635	8-719-224-11	DIODE 10YD2.4A
D640	8-719-200-02	DIODE 10E-2
D641	8-719-200-02	DIODE 10E-2
D642	8-719-911-19	DIODE 1SS119
D643	8-719-911-19	DIODE 1SS119
D644	8-719-911-19	DIODE 1SS119
D645	8-719-911-19	DIODE 1SS119
D646	8-719-911-19	DIODE 1SS119
D647	8-719-911-19	DIODE 1SS119
D648	8-719-911-19	DIODE 1SS119
D649	8-719-981-00	DIODE ERC81-004
D650	8-719-911-19	DIODE 1SS119
D651	8-719-911-19	DIODE 1SS119
D652	8-719-910-64	DIODE HZ6B1L
D653	8-719-911-19	DIODE 1SS119
D654	8-719-911-19	DIODE 1SS119
D655	8-719-911-19	DIODE 1SS119
D701	8-719-901-33	DIODE 1SS133
D702	8-719-901-33	DIODE 1SS133
D703	8-719-901-33	DIODE 1SS133
D704	8-719-910-61	DIODE HZ6A1L
D705	8-719-901-33	DIODE 1SS133
D706	8-719-901-33	DIODE 1SS133
D707	1-806-336-00	DIODE S8102 (LED)
IC101	8-759-905-42	IC NE5534P
IC102	8-759-993-53	IC LF353H
IC103	8-759-993-53	IC LF353H

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC104	8-758-990-00	IC CX-899
IC105	8-759-993-53	IC LF353H
IC106	8-759-340-53	IC MSM4053RS
IC107	8-759-907-01	IC TL071CP
IC108	8-759-903-56	IC LF356H
IC109	8-759-145-58	IC UPC4558C
IC201	8-759-905-42	IC NE5534P
IC202	8-759-993-53	IC LF353H
IC203	8-759-993-53	IC LF353H
IC204	8-758-990-00	IC CX-899
IC205	8-759-993-53	IC LF353H
IC206	8-759-940-53	IC MSM4053RS
IC207	8-759-907-01	IC TL071CP
IC208	8-759-903-56	IC LF356H
IC209	8-759-145-58	IC UPC4558C
IC301	8-759-200-05	IC TC40H008P
IC302	8-759-220-74	IC TC40H074P
IC303	8-759-979-05	IC UA79M05CKC
IC304	8-758-900-00	IC CX-890
IC306	8-759-745-56	IC NJM4556D
IC501	8-759-903-55	IC LF357H
IC502	8-759-903-55	IC LF357H
IC503	8-759-993-53	IC LF353H
IC504	8-759-103-19	IC UPC319C
IC505	8-759-979-14	IC CX-7914
IC506	8-759-245-05	IC TM4505P
IC507	8-759-901-28	IC MSM512812R
IC508	8-759-178-50	IC UPD785C
IC509	8-759-901-28	IC MSM512812R
IC510	8-759-900-69	IC SN74ALS74N
IC511	8-759-240-24	IC TC4024BP
IC512	8-759-900-67	IC SN74ALS02N
IC513	8-759-900-67	IC SN74ALS02N
IC514	8-759-220-32	IC TC40H032P
IC515	8-759-245-28	IC TC4528BP
IC516	8-759-900-69	IC SN74ALS74N
IC517	8-759-221-64	IC TC40H164P
IC518	8-759-221-64	IC TC40H164P
IC519	8-759-220-74	IC TC40H074P
IC520	8-759-220-74	IC TC40H074P
IC521	8-759-220-74	IC TC40H074P
IC522	8-759-901-63	IC SN74LS163A
IC523	8-759-901-64	IC SN74LS164N
IC524	8-759-200-09	IC TC40H393P
IC525	8-759-241-63	IC TC40163BP

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC526	8-759-901-63	IC SN74LS163A
IC527	8-759-220-74	IC TC40H074P
IC528	8-759-240-29	IC TC4029BP
IC529	8-759-901-57	IC SN74LS157N
IC530	8-759-245-28	IC TC4528BP
IC531	8-759-990-72	IC TL072CP
IC532	8-759-200-05	IC TC40H008P
IC533	8-759-904-14	IC SN74ALS04N
IC534	8-759-200-08	IC TC40H367P
IC535	8-759-900-04	IC SN74LS04N
IC536	8-759-178-15	IC UPC78L15
IC537	8-759-220-02	IC TC40H002P
IC538	8-759-200-05	IC TC40H008P
IC539	8-759-200-05	IC TC40H008P
IC540	8-759-900-27	IC SN74LS27N
IC541	8-759-974-06	IC SN7406N
IC550	8-759-905-69	IC NE564N
IC551	8-759-904-98	IC 74LS169PC
IC552	8-759-904-98	IC 74LS169PC
IC553	8-759-904-98	IC 74LS169PC
IC554	8-759-904-98	IC 74LS169PC
IC555	8-759-900-69	IC SN74ALS74N
IC601	8-759-240-93	IC TC4093BP
IC602	8-759-145-84	IC UPD4584BC
IC603	8-759-240-50	IC TC4050BP
IC605	8-759-240-01	IC TC4001BP
IC606	8-759-240-01	IC TC4001BP
IC607	8-759-240-11	IC TC4011BP
IC609	8-759-145-57	IC UPC4557C
IC610	8-759-240-66	IC TC4066BP
IC701	8-759-120-30	IC UPD652C030
IC702	8-759-940-50	IC MSM4050RS
IC703	8-759-729-03	IC NJM2903D
J101	1-507-666-00	JACK, LARGE TYPE
J201	1-507-666-00	JACK, LARGE TYPE
J301	1-507-649-00	JACK
J601	1-561-794-00	SOCKET, CONNECTOR 5P
L501	1-407-169-XX	MICRO INDUCTOR 100UH
L502	1-407-169-XX	MICRO INDUCTOR 100UH
L503	1-426-090-00	TRANSFORMER, RF
L504	1-407-163-XX	MICRO INDUCTOR 33UH
L505	1-459-379-00	COIL (WITH CORE)
L506	1-407-163-XX	MICRO INDUCTOR 33UH
LPF101	1-464-170-00	FILTER, LOW PASS
LPF102	1-464-170-00	FILTER, LOW PASS
LPF201	1-464-170-00	FILTER, LOW PASS
LPF202	1-464-170-00	FILTER, LOW PASS

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q101	8-765-660-10	TRANSISTOR 2SK245
Q102	8-765-640-10	TRANSISTOR 2SK244
Q103	8-729-113-82	TRANSISTOR 2SA1138
Q104	8-729-113-82	TRANSISTOR 2SA1138
Q105	8-729-167-62	TRANSISTOR 2SC2676
Q106	8-729-167-62	TRANSISTOR 2SC2676
Q107	8-729-907-11	TRANSISTOR 2SC2071
Q108	8-729-993-92	TRANSISTOR 2SA939
Q109	8-765-422-00	TRANSISTOR 2SK152-2
Q110	8-765-422-00	TRANSISTOR 2SK152-2
Q111	8-729-663-48	TRANSISTOR 2SC1364-8
Q201	8-765-660-10	TRANSISTOR 2SK245
Q202	8-765-640-10	TRANSISTOR 2SK244
Q203	8-729-113-82	TRANSISTOR 2SA1138
Q204	8-729-113-82	TRANSISTOR 2SA1138
Q205	8-729-167-62	TRANSISTOR 2SC2676
Q206	8-729-167-62	TRANSISTOR 2SC2676
Q207	8-729-907-11	TRANSISTOR 2SC2071
Q208	8-729-993-92	TRANSISTOR 2SA939
Q209	8-765-422-00	TRANSISTOR 2SK152-2
Q210	8-765-422-00	TRANSISTOR 2SK152-2
Q211	8-729-663-48	TRANSISTOR 2SC1364-8
Q501	8-769-132-00	TRANSISTOR 2SK121-2
Q502	8-729-663-47	TRANSISTOR 2SC1364
Q503	8-769-132-00	TRANSISTOR 2SK121-2
Q504	8-729-612-77	TRANSISTOR 2SA1027R
Q505	8-729-663-47	TRANSISTOR 2SC1364
Q506	8-729-663-47	TRANSISTOR 2SC1364
Q507	8-729-612-77	TRANSISTOR 2SA1027R
Q508	8-729-663-47	TRANSISTOR 2SC1364
Q509	8-729-663-47	TRANSISTOR 2SC1364
Q510	8-729-663-47	TRANSISTOR 2SC1364
Q511	8-729-663-47	TRANSISTOR 2SC1364
Q513	8-729-663-47	TRANSISTOR 2SC1364
Q514	8-729-612-77	TRANSISTOR 2SA1027R
Q515	8-729-663-47	TRANSISTOR 2SC1364
Q516	8-729-663-47	TRANSISTOR 2SC1364
Q517	8-729-663-47	TRANSISTOR 2SC1364
Q518	8-729-671-14	TRANSISTOR 2SC710-14
Q519	8-729-671-14	TRANSISTOR 2SC710-14
Q520	8-729-671-14	TRANSISTOR 2SC710-14
Q521	8-729-663-47	TRANSISTOR 2SC1364
Q522	8-729-224-62	TRANSISTOR 2SK246-GR
Q523	8-729-663-47	TRANSISTOR 2SC1364
Q524	8-725-923-00	TRANSISTOR 2SC1129

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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

## COILS

- MMH : mH, UH : μH

## SEMICONDUCTORS

- In each case, U : μ, for example: UA....: μA...., UPA....: μPA...., UPC....: μPC, UPD....: μPD....

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## ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q525	8-769-200-30	TRANSISTOR 2SK107-3
Q526	8-729-663-47	TRANSISTOR 2SC1364
Q527	8-729-671-14	TRANSISTOR 2SC710-14
Q528	8-729-671-14	TRANSISTOR 2SC710-14
Q529	8-729-671-14	TRANSISTOR 2SC710-14
Q601	8-729-663-48	TRANSISTOR 2SC1364-8
Q602	8-729-663-48	TRANSISTOR 2SC1364-8
Q603	8-729-177-43	TRANSISTOR 2SD774
Q604	8-729-663-48	TRANSISTOR 2SC1364-8
Q605	8-729-177-43	TRANSISTOR 2SD774
Q606	8-729-663-48	TRANSISTOR 2SC1364-8
Q607	8-729-663-48	TRANSISTOR 2SC1364-8
Q608	8-729-663-48	TRANSISTOR 2SC1364-8
Q609	8-729-612-77	TRANSISTOR 2SA1027R
Q610	8-729-663-48	TRANSISTOR 2SC1364-8
Q611	8-729-663-48	TRANSISTOR 2SC1364-8
Q612	8-729-663-48	TRANSISTOR 2SC1364-8
Q613	8-729-663-48	TRANSISTOR 2SC1364-8
Q615	8-729-663-48	TRANSISTOR 2SC1364-8
Q616	8-729-663-48	TRANSISTOR 2SC1364-8
Q617	8-729-612-77	TRANSISTOR 2SA1027R
Q619	8-729-612-77	TRANSISTOR 2SA1027R
Q621	8-729-612-77	TRANSISTOR 2SA1027R
Q622	8-729-612-77	TRANSISTOR 2SA1027R
Q623	8-729-663-48	TRANSISTOR 2SC1364-8
Q624	8-729-663-48	TRANSISTOR 2SC1364-8
Q625	8-729-663-48	TRANSISTOR 2SC1364-8
Q626	8-729-663-48	TRANSISTOR 2SC1364-8
Q627	8-729-612-77	TRANSISTOR 2SA1027R
Q628	8-729-167-62	TRANSISTOR 2SC2676
Q629	8-729-113-82	TRANSISTOR 2SA1138
Q630	8-729-107-53	TRANSISTOR 2SC2275A
Q631	8-729-190-53	TRANSISTOR 2SA985A
Q632	8-729-167-62	TRANSISTOR 2SC2676
Q633	8-729-113-82	TRANSISTOR 2SA1138
Q634	8-729-167-62	TRANSISTOR 2SC2676
Q635	8-729-113-82	TRANSISTOR 2SA1138
Q636	8-729-113-82	TRANSISTOR 2SA1138
Q637	8-729-167-62	TRANSISTOR 2SC2676
Q638	8-729-113-82	TRANSISTOR 2SA1138
Q639	8-729-167-62	TRANSISTOR 2SC2676
Q640	8-729-663-48	TRANSISTOR 2SC1364-8
Q641	8-729-663-48	TRANSISTOR 2SC1364-8
Q642	8-729-663-48	TRANSISTOR 2SC1364-8
Q643	8-729-663-48	TRANSISTOR 2SC1364-8

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q701	8-729-902-11	TRANSISTOR 2SC2021
Q702	8-729-902-11	TRANSISTOR 2SC2021
Q703	8-729-902-11	TRANSISTOR 2SC2021
Q704	8-729-902-11	TRANSISTOR 2SC2021
Q705	8-729-902-11	TRANSISTOR 2SC2021
Q706	8-729-902-11	TRANSISTOR 2SC2021
Q707	8-729-902-11	TRANSISTOR 2SC2021
Q708	8-729-902-11	TRANSISTOR 2SC2021
Q709	8-729-902-11	TRANSISTOR 2SC2021
Q710	8-729-902-11	TRANSISTOR 2SC2021
Q711	8-729-902-11	TRANSISTOR 2SC2021
Q712	8-729-902-11	TRANSISTOR 2SC2021
Q713	8-729-902-11	TRANSISTOR 2SC2021
Q714	8-729-902-11	TRANSISTOR 2SC2021
Q715	8-729-902-11	TRANSISTOR 2SC2021
Q716	8-729-902-11	TRANSISTOR 2SC2021-S
R102	1-214-092-00	METAL 22 1% 1/4W
R103	1-214-156-00	METAL 10K 1% 1/4W
R104	1-214-143-00	METAL 3K 1% 1/4W
R105	1-214-143-00	METAL 3K 1% 1/4W
R106	1-214-124-00	METAL 470 1% 1/4W
R107	1-214-096-00	METAL 33 1% 1/4W
R108	1-214-096-00	METAL 33 1% 1/4W
R109	1-214-140-00	METAL 2.2K 1% 1/4W
R110	1-214-100-00	METAL 47 1% 1/4W
R111	1-214-180-00	METAL 100K 1% 1/4W
R112	1-214-900-31	METAL 30K 1% 1/2W
R113	1-214-921-31	METAL 220K 1% 1/2W
R114	1-214-876-00	METAL 3.3K 1% 1/2W
R115	1-214-100-00	METAL 47 1% 1/4W
R116	1-214-785-00	METAL 220K 1% 1/4W
R117	1-214-142-00	METAL 2.7K 1% 1/4W
R118	1-214-142-00	METAL 2.7K 1% 1/4W
R119	1-214-132-00	METAL 1K 1% 1/4W
R121	1-214-885-61	METAL 7.5K 1% 1/2W
R122	1-214-860-61	METAL 680 1% 1/2W
R123	1-214-850-61	METAL 270 1% 1/2W
R124	1-214-132-00	METAL 1K 1% 1/4W
R125	1-214-123-00	METAL 430 1% 1/4W
R126	1-214-139-00	METAL 2K 1% 1/4W
R127	1-214-139-00	METAL 2K 1% 1/4W
R128	1-214-116-00	METAL 220 1% 1/4W
R129	1-214-092-00	METAL 22 1% 1/4W
R130	1-214-092-00	METAL 22 1% 1/4W
R131	1-214-888-00	METAL 10K 1% 1/2W
R132	1-214-876-00	METAL 3.3K 1% 1/2W

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
R133	1-214-888-00	METAL 10K 1% 1/2W
R134	1-214-160-00	METAL 15K 1% 1/4W
R135	1-214-888-00	METAL 10K 1% 1/2W
R136	1-214-897-31	METAL 22K 1% 1/2W
R137	1-214-868-00	METAL 1.5K 1% 1/2W
R138	1-214-142-00	METAL 2.7K 1% 1/4W
R139	1-214-132-00	METAL 1K 1% 1/4W
R140	1-214-132-00	METAL 1K 1% 1/4W
R142	1-214-132-00	METAL 1K 1% 1/4W
R143	1-214-172-00	METAL 47K 1% 1/4W
R144	1-214-156-00	METAL 10K 1% 1/4W
R145	1-214-108-00	METAL 100 1% 1/4W
R146	1-214-180-00	METAL 100K 1% 1/4W
R147	1-214-146-00	METAL 3.9K 1% 1/4W
R148	1-214-172-00	METAL 47K 1% 1/4W
R149	1-214-180-00	METAL 100K 1% 1/4W
R153	1-214-893-00	METAL 16K 1% 1/2W
R154	1-214-164-00	METAL 22K 1% 1/4W
R155	1-214-142-00	METAL 2.7K 1% 1/4W
R156	1-214-164-00	METAL 22K 1% 1/4W
R157	1-214-892-00	METAL 15K 1% 1/2W
R159	1-214-880-61	METAL 4.7K 1% 1/2W
R160	1-214-890-61	METAL 12K 1% 1/2W
R161	1-214-862-00	METAL 820 1% 1/2W
R162	1-214-956-00	METAL 470K 1% 1/4W
R163	1-214-180-00	METAL 100K 1% 1/4W
R164	1-214-852-61	METAL 330 1% 1/2W
R165	1-214-180-00	METAL 100K 1% 1/4W
R166	1-214-848-00	METAL 220 1% 1/2W
R167	1-214-168-00	METAL 33K 1% 1/4W
R168	1-214-158-00	METAL 12K 1% 1/4W
R169	1-214-151-00	METAL 6.2K 1% 1/4W
R170	1-214-143-00	METAL 3K 1% 1/4W
R171	1-214-136-00	METAL 1.5K 1% 1/4W
R172	1-214-136-00	METAL 1.5K 1% 1/4W
R173	1-214-180-00	METAL 100K 1% 1/4W
R174	1-214-173-00	METAL 51K 1% 1/4W
R175	1-214-150-00	METAL 5.6K 1% 1/4W
R176	1-214-112-00	METAL 150 1% 1/4W
R177	1-214-172-00	METAL 47K 1% 1/4W
R178	1-214-168-00	METAL 33K 1% 1/4W
R184	1-214-126-00	METAL 560 1% 1/4W
R185	1-214-126-00	METAL 560 1% 1/4W
R186	1-214-150-00	METAL 5.6K 1% 1/4W
R202	1-214-092-00	METAL 22 1% 1/4W

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
R203	1-214-156-00	METAL 10K 1% 1/4W
R204	1-214-143-00	METAL 3K 1% 1/4W
R205	1-214-143-00	METAL 3K 1% 1/4W
R206	1-214-124-00	METAL 470 1% 1/4W
R207	1-214-096-00	METAL 33 1% 1/4W
R208	1-214-096-00	METAL 33 1% 1/4W
R209	1-214-140-00	METAL 2.2K 1% 1/4W
R210	1-214-100-00	METAL 47 1% 1/4W
R211	1-214-180-00	METAL 100K 1% 1/4W
R212	1-214-900-31	METAL 30K 1% 1/2W
R213	1-214-921-31	METAL 220K 1% 1/2W
R214	1-214-876-00	METAL 3.3K 1% 1/2W
R215	1-214-100-00	METAL 47 1% 1/4W
R216	1-214-785-00	METAL 220K 1% 1/4W
R217	1-214-142-00	METAL 2.7K 1% 1/4W
R218	1-214-142-00	METAL 2.7K 1% 1/4W
R219	1-214-132-00	METAL 1K 1% 1/4W
R221	1-214-885-61	METAL 7.5K 1% 1/2W
R222	1-214-860-61	METAL 680 1% 1/2W
R223	1-214-850-61	METAL 270 1% 1/2W
R224	1-214-132-00	METAL 1K 1% 1/4W
R225	1-214-123-00	METAL 430 1% 1/4W
R226	1-214-139-00	METAL 2K 1% 1/4W
R227	1-214-139-00	METAL 2K 1% 1/4W
R228	1-214-116-00	METAL 220 1% 1/4W
R229	1-214-092-00	METAL 22 1% 1/4W
R230	1-214-092-00	METAL 22 1% 1/4W
R231	1-214-888-00	METAL 10K 1% 1/2W
R232	1-214-876-00	METAL 3.3K 1% 1/2W
R233	1-214-888-00	METAL 10K 1% 1/2W
R234	1-214-160-00	METAL 15K 1% 1/4W
R235	1-214-888-00	METAL 10K 1% 1/2W
R236	1-214-897-31	METAL 22K 1% 1/2W
R237	1-214-868-00	METAL 1.5K 1% 1/2W
R238	1-214-142-00	METAL 2.7K 1% 1/4W
R239	1-214-132-00	METAL 1K 1% 1/4W
R240	1-214-132-00	METAL 1K 1% 1/4W
R242	1-214-132-00	METAL 1K 1% 1/4W
R243	1-214-172-00	METAL 47K 1% 1/4W
R244	1-214-156-00	METAL 10K 1% 1/4W
R245	1-214-108-00	METAL 100 1% 1/4W
R246	1-214-180-00	METAL 100K 1% 1/4W

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

## COILS

- MMH : mH, UH : μH

## SEMICONDUCTORS

- In each case, U : μ, for example:  
UA....: μA...., UPA....: μPA...., UPC....: μPC,  
UPD....: μPD....

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

## COILS

- MMH : mH, UH : μH

## SEMICONDUCTORS

- In each case, U : μ, for example:  
UA....: μA...., UPA....: μPA...., UPC....: μPC,  
UPD....: μPD....

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R247	1-214-146-00	METAL	3.9K	1%	1/4W
R248	1-214-172-00	METAL	47K	1%	1/4W
R249	1-214-180-00	METAL	100K	1%	1/4W
R253	1-214-893-00	METAL	16K	1%	1/2W
R254	1-214-164-00	METAL	22K	1%	1/4W
R255	1-214-142-00	METAL	2.7K	1%	1/4W
R256	1-214-164-00	METAL	22K	1%	1/4W
R257	1-214-892-00	METAL	15K	1%	1/2W
R259	1-214-880-61	METAL	4.7K	1%	1/2W
R260	1-214-890-61	METAL	12K	1%	1/2W
R261	1-214-862-00	METAL	820	1%	1/2W
R262	1-214-956-00	METAL	470K	1%	1/4W
R263	1-214-180-00	METAL	100K	1%	1/4W
R264	1-214-852-61	METAL	330	1%	1/2W
R265	1-214-180-00	METAL	100K	1%	1/4W
R266	1-214-848-00	METAL	220	1%	1/2W
R267	1-214-168-00	METAL	33K	1%	1/4W
R268	1-214-158-00	METAL	12K	1%	1/4W
R269	1-214-151-00	METAL	6.2K	1%	1/4W
R270	1-214-143-00	METAL	3K	1%	1/4W
R271	1-214-136-00	METAL	1.5K	1%	1/4W
R272	1-214-136-00	METAL	1.5K	1%	1/4W
R273	1-214-180-00	METAL	100K	1%	1/4W
R274	1-214-173-00	METAL	51K	1%	1/4W
R275	1-214-150-00	METAL	5.6K	1%	1/4W
R276	1-214-112-00	METAL	150	1%	1/4W
R277	1-214-172-00	METAL	47K	1%	1/4W
R278	1-214-168-00	METAL	33K	1%	1/4W
R284	1-214-126-00	METAL	560	1%	1/4W
R285	1-214-126-00	METAL	560	1%	1/4W
R286	1-214-150-00	METAL	5.6K	1%	1/4W
R312	1-214-084-00	METAL	10	1%	1/4W
R313	1-214-108-00	METAL	100	1%	1/4W
R314	1-214-139-00	METAL	2K	1%	1/4W
R315	1-214-172-00	METAL	47K	1%	1/4W
R316	1-214-857-00	(Canadian)...RES. FUSE	10	5%	1/4W F
R316	1-214-084-00	(US,AEP,UK)...METAL	10	1%	1/4W
R317	1-214-857-00	(Canadian)...RES. FUSE	10	5%	1/4W F
R317	1-214-084-00	(US,AEP,UK)...METAL	10	1%	1/4W
R320	1-214-146-00	METAL	3.9K	1%	1/4W
R321	1-214-150-00	METAL	5.6K	1%	1/4W
R589	1-214-128-00	METAL	680	1%	1/4W

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R663	1-214-132-00	METAL	1K	1%	1/4W
R664	1-214-132-00	METAL	1K	1%	1/4W
R686	1-214-136-00	METAL	1.5K	1%	1/4W
R687	1-214-136-00	METAL	1.5K	1%	1/4W
R688	1-214-132-00	METAL	1K	1%	1/4W
R689	1-214-132-00	METAL	1K	1%	1/4W
R692	1-214-158-00	METAL	12K	1%	1/4W
R693	1-214-158-00	METAL	12K	1%	1/4W
R694	1-214-888-00	METAL	10K	1%	1/2W
R695	1-214-888-00	METAL	10K	1%	1/2W
R696	1-214-158-00	METAL	12K	1%	1/4W
R697	1-214-158-00	METAL	12K	1%	1/4W
R698	1-214-874-00	METAL	2.7K	1%	1/2W
R699	1-214-874-00	METAL	2.7K	1%	1/2W
R732	1-214-760-00	METAL	20K	1%	1/4W
R733	1-214-760-00	METAL	20K	1%	1/4W
R734	1-214-760-00	METAL	20K	1%	1/4W
R735	1-214-760-00	METAL	20K	1%	1/4W
R736	1-214-760-00	METAL	20K	1%	1/4W
R737	1-214-753-00	METAL	10K	1%	1/4W
R738	1-214-753-00	METAL	10K	1%	1/4W
R739	1-214-753-00	METAL	10K	1%	1/4W
R740	1-214-753-00	METAL	10K	1%	1/4W
R741	1-214-753-00	METAL	10K	1%	1/4W
R742	1-214-746-00	METAL	5.1K	1%	1/4W
R743	1-214-760-00	METAL	20K	1%	1/4W
R744	1-231-569-00	COMPOSITION CIRCUIT BLOCK			
R745	1-231-569-00	COMPOSITION CIRCUIT BLOCK			
R746	1-231-569-00	COMPOSITION CIRCUIT BLOCK			
R747	1-231-569-00	COMPOSITION CIRCUIT BLOCK			
R801	1-214-874-00	METAL	2.7K	1%	1/2W
R802	1-214-874-00	METAL	2.7K	1%	1/2W
R812	1-214-862-00	METAL	820	1%	1/2W
R813	1-214-862-00	METAL	820	1%	1/2W
R830	1-214-852-61	METAL	330	1%	1/2W
R831	1-214-852-61	METAL	330	1%	1/2W
R909	1-214-170-00	METAL	39K	1%	1/4W
R913	1-214-173-00	METAL	51K	1%	1/4W
R914	1-214-173-00	METAL	51K	1%	1/4W
R915	1-214-140-00	METAL	2.2K	1%	1/4W
R916	1-214-174-00	METAL	56K	1%	1/4W
R917	1-214-177-00	METAL	75K	1%	1/4W
R918	1-214-163-00	METAL	20K	1%	1/4W
R925	1-214-134-00	METAL	1.2K	1%	1/4W
R926	1-214-124-00	METAL	470	1%	1/4W
R950	1-214-112-00	METAL	150	1%	1/4W

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

## CAPACITORS:

- All capacitors are in pF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:pF, PF:pF.

## RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

## COILS

- MMH : mH, UH : μH

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

## SEMICONDUCTORS

In each case, U : μ, for example:  
 UA...: μA..., UPA...: μPA..., UPC...: μPC,  
 UPD...: μPD...



## ELECTRICAL PARTS

Ref.No.	Part No.	Description
RV101	1-224-247-XX	RES, ADJ, METAL GLAZE 100
RV102	1-228-508-12	RES, VAR, CARBON 20K
RV103	1-224-252-31	RES, ADJ, METAL GLAZE 10K
RV104	1-224-550-31	RES, ADJ, METAL GLAZE 220
RV105	1-224-248-31	RES, ADJ, METAL GLAZE 470
RV106	1-224-253-31	RES, ADJ, METAL GLAZE 22K
RV201	1-224-247-XX	RES, ADJ, METAL GLAZE 100
RV202	1-228-508-12	RES, VAR, CARBON 20K
RV203	1-224-252-31	RES, ADJ, METAL GLAZE 10K
RV204	1-224-550-31	RES, ADJ, METAL GLAZE 220
RV205	1-224-248-31	RES, ADJ, METAL GLAZE 470
RV206	1-224-253-31	RES, ADJ, METAL GLAZE 22K
RV601	1-224-493-00	RES, ADJ, METAL FILM 10K
RV602	1-224-490-00	RES, ADJ, METAL FILM 4.7K
RV603	1-224-490-00	RES, ADJ, METAL FILM 4.7K
RV604	1-224-490-00	RES, ADJ, METAL FILM 4.7K
RY301	1-515-445-00	RELAY
RY302	1-515-448-00	RELAY
RY303	1-515-448-00	RELAY
RY304	1-515-448-00	RELAY
RY601	1-515-446-00	RELAY
RY602	1-515-446-00	RELAY
RY603	1-515-460-00	RELAY
S301	1-553-254-00	SWITCH, ROTARY
S601	1-553-967-00	SWITCH, TOGGLE
S602	1-553-967-00	SWITCH, TOGGLE
S603	1-553-967-00	SWITCH, TOGGLE
S604	1-553-856-00	SWITCH, KEY BOARD
S605	1-553-856-00	SWITCH, KEY BOARD
S606	1-553-856-00	SWITCH, KEY BOARD
S607	1-553-856-00	SWITCH, KEY BOARD
S608	1-553-856-00	SWITCH, KEY BOARD
S609	1-553-856-00	SWITCH, KEY BOARD
S610	1-552-972-21	SWITCH, SLIDE
T201	1-426-106-00	TRANSFORMER, RF
T301	1-426-106-00	TRANSFORMER, RF
X201	1-527-952-00	VIBRATOR, CRYSTAL
X301	1-527-948-12	VIBRATOR, CRYSTAL
X501	1-527-583-00	(NTSC).....OSCILLATOR, CRYSTAL
X501	1-527-788-00	(PAL/SECAM)...OSCILLATOR, CRYSTAL
X502	1-527-949-00	VIBRATOR, CRYSTAL
X503	1-527-871-00	OSCILLATOR, LITHIUM TANTALATE
X701	1-527-532-00	OSCILLATOR, CERAMIC

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- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

### CAPACITORS:

- All capacitors are in  $\mu$ F. Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF: $\mu$ F, PF: $\mu$ F.

### RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

### COILS

- MMH : mH, UH :  $\mu$ H

### SEMICONDUCTORS

In each case, U :  $\mu$ , for example:

UA... :  $\mu$ A..., UPA... :  $\mu$ PA..., UPC... :  $\mu$ PC,

UPD... :  $\mu$ PD...

## ELECTROLYTIC CAPACITORS

RATING → : Use the high voltage rated one.						
CAP. (μF)	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.	50 VOLT. PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	—	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	—
3300	1-121-661-00	1-123-075-00	1-123-071-00	—	—	—

CAP. (μF)	100 VOLT. PART No.	160 VOLT. PART No.	250 VOLT. PART No.	350 VOLT. PART No.
0.47	—	—	—	—
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	—	1-123-028-00
3.3	1-121-995-00	—	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	—	—
47	1-123-251-00	1-121-919-00	—	—
100	1-123-084-00	—	—	—

## CERAMIC CAPACITORS

RATING							
CAP. (pF)	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

## CERAMIC (SEMICONDUCTOR) CAPACITORS

RATING → : Use the high voltage rated one.					
CAP. (μF)	25 VOLT. PART No.	50 VOLT. PART No.	CAP. (μF)	25 VOLT. PART No.	50 VOLT. PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

## MYLAR CAPACITORS

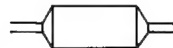
RATING												
CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.	
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00	
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00	
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00	
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00	
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00	
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—	
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—	
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—	
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—	
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00					
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00					
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00					



## TANTALUM CAPACITORS

RATING							
→: Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01					→	→	1-131-396-00
0.015					→	→	1-131-397-00
0.022					→	→	1-131-398-00
0.033					→	→	1-131-399-00
0.047					→	→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	—	—	—	—	1-131-412-00	→	1-131-406-00
0.68	—	—	—	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	—	—	1-131-418-00	—	1-131-413-00	→	1-131-408-00
1.5	—	1-131-421-00	—	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	—	1-131-419-00	—	1-131-414-00	1-131-355-00	1-131-349-00
3.3	—	1-131-422-00	—	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	—	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	—	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	—
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	—			
68	1-131-394-00	1-131-388-00	—	—			
100	1-131-395-00	—	—	—			

## TANTALUM CAPACITORS



RATING						
CAP. (μF)	3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22					1-131-262-00	1-131-278-00
0.33					1-131-263-00	1-131-279-00
0.47			1-131-169-00		1-131-264-00	1-131-280-00
0.68				1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00		1-131-266-00	1-131-282-00
1.5		1-131-250-00			1-131-267-00	1-131-283-00
2.2		—		1-131-259-00	1-131-268-00	1-131-284-00
3.3		—	1-131-255-00		1-131-269-00	—
4.7		1-131-251-00	1-131-171-00		1-131-270-00	—
6.8		—		1-131-260-00	1-131-271-00	—
10		—	1-131-256-00		1-131-272-00	—
15		1-131-252-00		1-131-261-00		
22		—	1-131-257-00			
33	1-131-176-00	1-131-253-00	1-131-173-00			
47	1-131-288-00	1-131-174-00	—			
100	1-131-177-00					

**1/4 WATT CARBON RESISTORS**

$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

**1/8 WATT CARBON RESISTOR**

$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.	$\Omega$	Part No.
2.0	—	13	1-246-821-00	91	1-246-831-00	620	1-246-841-00	4.3k	1-246-851-00	30k	1-246-861-00	200k	1-246-871-00
2.2	1-246-751-00	15	1-246-761-00	100	1-246-771-00	680	1-246-781-00	4.7k	1-246-791-00	33k	1-246-801-00	220k	1-246-811-00
2.4	—	16	1-246-822-00	110	1-246-832-00	750	1-246-842-00	5.1k	1-246-852-00	36k	1-246-862-00	240k	1-247-054-00
2.7	1-246-752-00	18	1-246-762-00	120	1-246-772-00	820	1-246-782-00	5.6k	1-246-792-00	39k	1-246-802-00	270k	1-247-046-00
3.0	—	20	1-246-823-00	130	1-246-833-33	910	1-246-843-00	6.2k	1-246-853-00	43k	1-246-863-00	300k	1-247-055-00
3.3	1-246-753-00	22	1-246-763-00	150	1-246-773-00	1.0k	1-246-783-00	6.8k	1-246-793-00	47k	1-246-803-00	330k	1-247-047-00
3.6	—	24	1-246-824-00	160	1-246-834-00	1.1k	1-246-844-00	7.5k	1-246-854-00	51k	1-246-864-00	360k	1-247-056-00
3.9	1-246-754-00	27	1-246-764-00	180	1-246-774-00	1.2k	1-246-784-00	8.2k	1-246-794-00	56k	1-246-804-00	390k	1-247-048-00
4.3	—	30	1-246-825-00	200	1-246-835-00	1.3k	1-246-845-00	9.1k	1-246-855-00	62k	1-246-865-00	430k	1-247-057-00
4.7	1-246-755-00	33	1-246-765-00	220	1-246-775-00	1.5k	1-246-785-00	10k	1-246-795-00	68k	1-246-805-00	470k	1-247-049-00
5.1	—	36	1-246-826-00	240	1-246-836-00	1.6k	1-246-846-00	11k	1-246-856-00	75k	1-246-866-00	510k	1-247-058-00
5.6	1-246-756-00	39	1-246-766-00	270	1-246-776-00	1.8k	1-246-786-00	12k	1-246-796-00	82k	1-246-806-00	560k	1-247-050-00
6.2	—	43	1-246-827-00	300	1-246-837-00	2.0k	1-246-847-00	13k	1-246-857-00	91k	1-246-867-00	620k	1-247-059-00
6.8	1-246-757-00	47	1-246-767-00	330	1-246-777-00	2.2k	1-246-787-00	15k	1-246-797-00	100k	1-246-807-00	680k	1-247-051-00
7.5	1-246-818-00	51	1-246-828-00	360	1-246-838-00	2.4k	1-246-848-00	16k	1-246-858-00	110k	1-246-868-00	750k	1-247-060-00
8.2	1-246-758-00	56	1-246-768-00	390	1-246-778-00	2.7k	1-246-788-00	18k	1-246-798-00	120k	1-246-808-00	820k	1-247-052-00
9.1	1-246-819-00	62	1-246-829-00	430	1-246-839-00	3.0k	1-246-849-00	20k	1-246-859-00	130k	1-246-869-00	910k	1-247-061-00
10	1-246-759-00	68	1-246-769-00	470	1-246-779-00	3.3k	1-246-789-00	22k	1-246-799-00	150k	1-246-809-00	1M	1-247-053-00
11	1-246-820-00	75	1-246-830-00	510	1-246-840-00	3.6k	1-246-850-00	24k	1-246-860-00	160k	1-246-870-00		
12	1-246-760-00	82	1-246-770-00	560	1-246-780-00	3.9k	1-246-790-00	27k	1-246-800-00	180k	1-246-810-00		